

## WEIGHTS AND MEASURES IN HITTITE TEXTS

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Although in the last twenty years much has been said about the subject, I would like to discuss in more detail the weights and measures of objects mentioned in Hittite texts, especially in the votive texts.<sup>1</sup>

The aim of this article is to investigate whether there was a fixed standard for the weight (and/or dimensions) of the various objects related to the donor and the purpose of the gift. It must be borne in mind that offerings are also mentioned in the prayers and that the same applies to them as to the promised objects. As genre, the prayers are not mentioned again here.

In the first place it is striking that the votive texts nowhere mention the dimensions of objects, whereas this repeatedly occurs in the cult-inventory texts (inter alia in the so-called Bildbeschreibungen), especially in the case of statues of gods and people. Vice versa, dimensions are seldom given in the cult-inventory texts<sup>2</sup>, whereas in the votive texts regularly mention is made of the weight of the metal of which the object is made or is to be made. In most texts, however, the donor mentions neither dimensions nor weight.

There are three categories of descriptions of objects: (1) dimensions, but no weight (cult-inventory texts), (2) weight but no dimensions (votive texts), (3) neither weight nor dimension (both genres of texts). This fact could perhaps be explained as follows.

The cult-inventory texts deal with objects already used in the cult and as such can be measured; the weight, which is mainly an indication of the value of the object, is not an important factor in its identification. The main factor in the second category is the amount of metal; the weight determines the value of the offering. The third category comprises offerings promised in the votive texts by someone who does not wish to specify the size of his donation. It is remarkable that only twice does the person making the vow state explicitly: "I will determine the weight thereof according to my own judgment" (KI.LÁ.BÍ ZI-za *dahhi*); that in fifteen instances the object promised is qualified as being "of unspecified weight" (KI.LÁ.BÍ NU.GÁL) and that 56 offerings are not further specified.

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<sup>1</sup> Cf. Th.P.J. van den Hout: "Masse und Gewichte bei den Hethitern", RIA 7 1987-1990, 517-527 and J. Siegelová in Fs. Otten 2 1988 317-326.

<sup>2</sup> The following dimensions occur: 1 iron bull with support: 2 šekan (1 šekan is probably ca. 50 cm); statue of a man: 1½ šekan; 1 statue of a man, ... 1 šekan; 1 statue of a woman ... 1 šekan. This is probably why L. Rost's tabulated survey in *MIO* 9 1963, 204 ff. classifies the materials and the dimensions but not the weights. Objects with a specified weight are, inter alia, 2 *wakšur* casks of silver, their weight is 2 minas of silver, 1 GEŠPU (fist?) of silver of 20 šekels and 1 silver goblet of 8 šekels.

On closer perusal of the second category (only the weight of the objects is given), it appears that the weights given for gold or silver objects in our texts are 3, 6, 10, 16, 20 šekels and 1, 2 and 100 minas<sup>3</sup>. 1 mina equals 40 šekels<sup>4</sup>. The actual weight of a Hittite mina is not known. If we assume its weight to be the same as that of the Babylonian mina, i.e. ca. 470 grammes<sup>5</sup>, then 1 šekel would weigh 11.75 grammes<sup>6</sup>.

Can a correlation be established between the size of the promised object and the assistance requested of the god?

Naturally one's first assumption tends to be that the greater the need for divine assistance (therefore the greater the urgency), the greater will be the value of the promised object. This prompted H. Otten's<sup>7</sup> conclusion that the *kammara*-eye disease of the king (nowadays = 'cataract') could not have been a serious illness because of the slight value of the promised 1 fat ox and 4 sheep in Bo 2002a (= KUB 48.119). A. Kammenhuber believes that Puduḫepa's promises made in dreams were a rather cheap way of buying the indulgence of the gods<sup>8</sup>. Such an opinion perhaps underrates the possibility that, as daughter of a priest, Puduḫepa was guided by a deep religious feeling and was not mainly concerned with the cheapest solution. Apart from that, it is difficult to determine what is of little or great value to a person at a certain moment. Are there any text passages which attest that vows have been fulfilled in too cheap a manner and that consequently the god (or another being) admonishes the donor in a dream to give a more valuable offering, as remarked by A. Kammenhuber?<sup>9</sup> It does indeed (repeatedly) happen that the vow is not fulfilled or that what is promised is found to be inadequate<sup>10</sup>.

<sup>3</sup> 2 and 100 minas probably pertain only to silver objects. The 44 and 144 šekels of silver which are promised as purely amounts of metal in KUB 15.5 + IV 36' and 37' are not taken into consideration.

<sup>4</sup> See H. Otten, *Zum hethitischen Gewichtssystem*, *AfO* 17 1954-'56, 128, 131. An instructive passage in this connexion is KBo 17.74 + I 48 f. (Old Hittite) (StBoT 12 1970, 16 f.) where 5 minas of silver are given to 20 bearers of bronze spears with as a result 10 šekels of silver for each. We also know the correlation between the weights, because the Laws mention halved fines and their former amounts. For example a fine of 3 minas is reduced to 1 mina and 20 šekels. In KUB 30. 15 Obv. 3 the reading "a half mina and 20" probably cannot mean 20 šekels. (Cf. H. Otten, *HTR* 1958, 66 and 142). L. Christmann-Frank, *RHA* 29 1971, 65 does give as translation "Une fiole d'argent d'une demi-mine et vingt sicles...".

<sup>5</sup> The absolute weight of a mina at the end of the third millennium in Syria has once more been confirmed by the finding of a stone weight bearing the inscription "1 mina" and having a true weight of ca. 473 grammes (see T.A. Holland, *Iraq* 37 1975, 75 ff.).

<sup>6</sup> See M. Dietrich & O. Loretz *WdO* 3 1964-'66, 219 ff. H. Otten assumes that the Babylonian and the Hittite šekels were of the same weight and, since in Babylon there were 60 šekels in 1 mina and the weight of the šekel is taken to have been 8.4 grammes he arrives at a weight of  $40 \times 8.4 = 336$  grammes for 1 mina, practically the same as the weight of 1 mina in Karkemiš. E. Edel gives the Egyptian šekel 9 grammes (*SAK* 1 1974, 114<sup>8</sup>). For a possible 12.8 grammes see RIA 7 526.

<sup>7</sup> Telipinu 1942, 41<sup>3</sup>.

<sup>8</sup> THeth. 7 1976, 25. Likewise on p. 27 f. Puduḫepa is accused of trying to bribe the gods with vota, unlike Muršiliš II who looked on the oracles as an objective means of learning the truth from the gods.

<sup>9</sup> THeth. 7 1976, 25 f.: "Solche Vota werden, wenn sie noch nicht oder nur in ungenugender oder zu billiger Weise erfüllt sind, in den Träumen angemahnt".

<sup>10</sup> An example of the latter is KUB 15.5 + III 9 where Danuḫepa points out to the king in a dream that the golden rhyton which the king commissioned for the Weather-god in order to propitiate him was not adequate. Danuḫepa says to the king: "Take care that, now the Weather-god will come into heaven, he finds no negligence in you!". From the oracle text KUB 22.70, too, it appears that a queen deposited golden necklaces, requested by the god of Aruṣna in a dream, in the house of an official and in their stead had two less valuable silver ornaments made (Obv. 13-15). The dating of this text is not, however, absolutely certain: some scholars date this text in the reign of Tuthaliaš IV, others in that of Muršiliš II.

In a great many of the vows, no direct correlation can be established between the seriousness of the situation and the size of the promised object, while the type of object correlates to the goal aimed at to only a limited degree. Examples of text passages in which a large offering (in our eyes) is promised for something weighty<sup>11</sup> are: KUB 15.1 I 1-11: a golden statue with a golden rosette for the life of the king and protection against evil. KUB 15.1 III 32-38: a golden statue of Ištar and silver weapons for the life of the king<sup>12</sup>. KUB 15.23. Rev. 17'-21': the invocation of the god and a [golden] image of the king for the king continuing to live for many years. KUB 15.24 I 1-6: a *ḫalentuwa* house and a gateway<sup>13</sup> for the life (of the king?). KUB 15.28 + II 6-10': silver images of the king and the queen if they both continue to live.

The god's reward would seem relatively small in the following instances: three storage vessels (with oil, honey and fruit) if the king lives one hundred years (KUB 15.1 III 7'-16') and a (silver?) shield and a silver gateway if the enemy does not penetrate into Hatti, if the matter of the king's dying goes no further and if the inhabitants of the countries of Hatti, the court and the king shall remain healthy (?) (KUB 15.22 1'-11'). But in this case perhaps all the goddess needed to do was to hold aloft her shield to provide protection against evil influences, so that a whole list of evils could be averted by one act.

Sometimes there is an obvious correlation between the promised object and the desired goal: a shield for averting evil<sup>14</sup>, an ear for hearkening to the person making the vow<sup>15</sup>, a silver city if the city of Ankuwa is preserved<sup>16</sup>, a golden soul for the life of the king<sup>17</sup>, etc. In most cases there is no direct correlation, the offering simply consists of an action or an object that will please the god. Our assessment of the value of what is promised is also often hindered by the lack of any specification of the material (sometimes because of textual damage) and of the weight. Moreover we cannot tell how the value of the objects relates to the property of the person making the vow.

<sup>11</sup> If the task of a god could ever be qualified as light or heavy!

<sup>12</sup> But 1 pair of golden breasts is promised for the life of the king in KUB 15.11 II 1-4.

<sup>13</sup> Provided, at least, that small models are not intended. In a number of cases the objects could be life-size and in others valuable small models made of solid gold or silver.

<sup>14</sup> KUB 15.1 II 13-24 and 15.22 1'-11'.

<sup>15</sup> KUB 15.1 II 25-27, 28-36 and IV 18-22.

<sup>16</sup> KUB 15.1 III 17-26 and 27-31.

<sup>17</sup> KUB 15.19 Obv. 3'-5'.

### The weights given for objects in the votive texts

<i>3 šekels</i>	A golden soul <sup>18</sup> and a golden earpendant <sup>19</sup> of this weight are promised. They probably weigh 35 grammes.
<i>6 šekels</i>	1 pair of silver eyes <sup>20</sup> , ca. 70 grammes altogether.
<i>10 šekels</i>	1 silver soul <sup>21</sup> , 1 golden ear <sup>22</sup> and two other objects unidentifiable because of textual damage <sup>23</sup> . They weigh ca. 117 grammes.
<i>16 šekels</i>	1 golden solar disk <sup>24</sup> . Ca. 188 grammes.
<i>20 šekels</i>	1 golden soul <sup>25</sup> , 1 silver statue of a lion <sup>26</sup> , 1 golden Ištar <sup>27</sup> . Ca. 235 grammes.
<i>1 mina</i>	1 silver ear <sup>28</sup> , 1 golden soul <sup>29</sup> , 1 silver statue of a lion <sup>30</sup> , 1 silver rhyton <sup>31</sup> , 1 silver Ištar <sup>32</sup> . Ca. 470 grammes.
<i>2 minas</i>	1 pair of silver eyes <sup>33</sup> . Ca. 940 grammes.
<i>100 minas</i>	1 statue of the king <sup>34</sup> , two objects unidentifiable because of textual damage <sup>35</sup> . Ca. 41 kilogrammes.

On the whole, royal diplomatic gifts to foreign princes are considerably heavier than the objects promised to the gods<sup>36</sup>. For instance Šuppiluliuma I sent a stag rhyton of 5 minas of silver and a ram rhyton of 3 minas of silver to Akhenaten on the occasion of his accession to the throne<sup>37</sup>. Vice versa, the Egyptian crown prince Sutahapšap sent Ḫattušili III a golden goblet of first quality gold with incrustation, embossed with the face of a bull with horns of white stone and eyes of black stone. The weight of first quality

<sup>18</sup> KUB 15.8 I 6'.

<sup>19</sup> KUB 15.9 III 8'.

<sup>20</sup> KUB 15.8 I 7'.

<sup>21</sup> KUB 15.1 II 12 and 15.1 III 3'.

<sup>22</sup> KUB 15.1 II 27 and 15.9 III 7'.

<sup>23</sup> KUB 15.5 + IV 15' and 15.7 8'.

<sup>24</sup> KUB 15.5 + IV 5.

<sup>25</sup> KUB 15.19 Obv.13'.

<sup>26</sup> KUB 48.126 22'.

<sup>27</sup> KUB 48.123 I 18'.

<sup>28</sup> KUB 15.1 II 27.

<sup>29</sup> KUB 15.19 Obv. 5'.

<sup>30</sup> KBo 8.61 3'.

<sup>31</sup> KBo 8.63 I 7'.

<sup>32</sup> KUB 48.123 I 18.

<sup>33</sup> KBo 8.61 7'.

<sup>34</sup> KUB 15.9 III 2'.

<sup>35</sup> KUB 15.9 III 4' and 15.29 I 3'.

<sup>36</sup> These brief comments on royal gifts are only meant to give some idea of the weights involved.

<sup>37</sup> EA 41. See H. Ehelolf in ZA 45 1939, 71.



gold, which was worth almost twice as much as ordinary gold<sup>38</sup>, was 93 šekels, ca. 846 grammes<sup>39</sup>. Ramses II also sent precious gifts to Hittite connexions: according to KBo 28.44 a Hittite prince received a goblet of 49 šekels of first quality gold and according to KBo 28.4 a high-ranking Hittite official received a goblet of 48 šekels of first quality gold, hence approximately half of the weight of the gold received by the king<sup>40</sup>. A necklace of 88 šekels of first quality gold was sent to Puduḥepa by the Egyptian queen Naptera, which was, as E. Edel remarks “für eine Halskette gewiss ein stattlicher Betrag”<sup>41</sup>.

## CONCLUSION

In conclusion, the most salient point is that in the votive texts a certain object is not characterised by a fixed weight. For instance a golden soul varies from 3 šekels to 1 mina. A comparison between the weights with those of Hittite objects which have been published and of which the weight and dimensions are mentioned in the literature, could perhaps help us to estimate the size of the promised objects. Unfortunately both weights and measures are mentioned only in the catalogue of the Schimmel collection<sup>42</sup>. The famous silver stag rhyton (Sch. no. 123) is 17 x 18 cm and weighs 322.5 grammes = ca. 28 šekels<sup>43</sup>. The silver rhyton of 1 mina in KBo 8.63 I 7', where the animal is not mentioned, is therefore heavier by 12 šekels. The golden statuette of a sitting goddess (Sch. no. 125) is 4.3 cm high and weighs only 23.2 grammes = 2 šekels, and Sch. no. 131, a silver sitting goddess weighs 21.9 grammes = also roughly 2 šekels. The aforesaid statues of Ištar, a golden one of 20 šekels and a silver one of 1 mina, therefore must have been very much larger and be more solid. Sch. no. 129, a golden solar disk, weighs 9.3 grammes = ca. 1 šekel. Here again the comparable object of 16 šekels (KUB 15.5 + IV 5) promised in the texts must have been a great deal heavier<sup>44</sup>. The other objects in the Schimmel collection which could possibly be used for the purpose of comparison are not mentioned with their weight in the votive texts, hence no comparison is possible. Although the number of significant objects is very small, one might circumspectly infer that the Schimmel objects were not presented to the temple in consequence of an official vow made by a king or queen. They could well have been given by lower-ranking officials or private individuals, though we have no attestations for this<sup>45</sup>. Sometimes there

<sup>38</sup> E. Edel, *Der Brief des ägyptischen Wesirs Pašijara...* 1978, 129'.

<sup>39</sup> E. Edel o.c. 133. For the weight of an Egyptian šekel, see E. Edel o.c. 128.

<sup>40</sup> E. Edel o.c. 135<sup>+1</sup>.

<sup>41</sup> E. Edel o.c. 143. According to E. Edel o.c. 128, the weight of gifts sent elsewhere was mentioned to prevent replacement by gifts of inferior quality during transport. It is clearly manifest from all transportations that Anatolia had more silver than gold, Egypt more gold than silver.

<sup>42</sup> *Ancient Art, The Norbert Schimmel Collection*, ed. by O. White Muscarella, 1974. The items from this collection are designated as “Sch. no ...”.

<sup>43</sup> Hence the silver stag rhyton mentioned previously as a gift of Šuppiluliuma I (note 37) was more than six times heavier.

<sup>44</sup> In Hittite texts the weight of a solar disk varies from 1 šekel to 5 minas (F. Sommer, *ZA* 46 1940, 33).

<sup>45</sup> One of the rare occasions when a rhyton plus its weight is mentioned in festival descriptions is KUB 31.76 Rev. 14' and 18' where mention is made respectively of a silver neck of an ox of 20 šekels and a silver oxen rhyton of 1 mina

occurs in the *Bildbeschreibungen* an ALAM TUR = “statuette”, with no specification of weight<sup>46</sup>. A silver goblet of 8 šekels<sup>47</sup> and a fist (?) (GEŠPU) of 20 šekels<sup>48</sup> can hardly be reckoned lighter offerings and moreover, the goblet was an offering of a king Muršili<sup>49</sup> to the Weather-god of Liḫzina. The only really light objects mentioned in the texts are the golden lion of 1 šekel, iron bulls each of 1 šekel, a silver hearth of 1 šekel etc., which were foundation-offerings<sup>50</sup>. The few, golden statuettes of gods found in various places are of a size comparable to those of the Schimmel collection<sup>51</sup>. Consequently all the objects were relatively small, were perhaps designated ALAM TUR, and were probably small portable copies of the large statues of the gods.

On the grounds of the whole body of the votive texts, no definite standard can be established for the weight of an offering in correlation to the donor and the purpose of the donation.

(see O. Carruba, *Kadmos* 6 1967, 92). Silver objects plus their weights are also mentioned in royal funerary rituals (H. Otten, *HTR* 1958, 34, 66 and 68; WdO, 2 1959, 477 f.; L. Christmann-Franck, *RHA* 29 1971 65, 67, 76), for example a silver boar's snout of 10 šekels, a silver well or basin of 10 šekels, a lamp of [?] šekels and a silver axe of 20 šekels. In each case, with the exception of the axe, all objects can be filled with water or oil, therefore the weight was possibly used as an indicator of capacity. Similarly, the functional indication of the weight of an axe is understandable. In any case the valuable objects were not intended as burial gifts: the said objects must, however, be classified among the minutely prescribed cult objects and consequently do not fit into the category in question here.

<sup>46</sup> KUB 38. 1 I 1 Obv.? 5' and KUB 38. 17 IV 3' f., *inter alia*.

<sup>47</sup> KUB 38.3 I 4.

<sup>48</sup> As present for Zababa in KUB 38. 1 I 5. At the 27<sup>th</sup> Rencontre d'Assyriologie in 1980, H.G. Güterbock displayed a silver vase shaped like a fist which is now deposited in a museum in Boston. Published by H.G. Güterbock and T. Kendall in: “The Ages of Homer, a Tribute to Emily Townsend Vermeule”, 1995 45-60. Dimensions are given, but not the weight.

<sup>49</sup> Since the object could have been in the temple for some time and the text which mentions the offering (KUB 38.3 I 5) can probably be dated later than the last Muršiliš (III), it is difficult to determine which Muršiliš was the donor.

<sup>50</sup> KUB 2.2 II 7 ff. Translation a.o. in A. Goetze ANET<sup>3</sup> 1969, 356. It is remarkable that all the objects mentioned there together with their weight weigh 1 šekel.

<sup>51</sup> Statuettes from *inter alia* Karkemiš, Boghazköy, Yozgat and Çiftlik, in E. Akurgal & M. Hirmer, *Die Kunst der Hethiter* 1961 illus. 53 and K. Bittel, *Die Hethiter* 1976 illus. 167, 168, 170 and 171.

## AUX ORIGINES DE L'ICHTHYOMANCIE EN ANATOLIE ANCIENNE

### Sources textuelles et données archéologiques

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#### Résumé

Les sources cunéiformes hittites témoignent de l'existence d'une pratique divinatoire sud-anatolienne consistant à observer le comportement d'un animal évoluant dans un bassin et désigné par l'idéogramme MUŠ. Le présent article revient en détail sur la possibilité d'identifier cet animal à un poisson serpentiforme de type anguille ou murène. Il s'interroge en outre sur l'éventuelle filiation entre cette tradition ichthyomantique et celle que les sources grecques et latines de l'époque gréco-romaine situent en Anatolie sud-occidentale (Lycie).

#### Abstract

Hittite cuneiform sources attest to the existence of a Southern Anatolian divinatory technique which consists of observing, in a basin, the behaviour of an animal designated by the ideogram MUŠ. The present article further investigates the possible identification of this animal with a snake-shaped fish, namely an eel or a moray. Furthermore, it examines the eventual filiation between this ichthyomantic tradition and the one which Greek and Roman sources locate in South-West Anatolia (Lycia).

Le rôle fondamental de la mantique dans les civilisations de l'Antiquité, et dans le monde gréco-romain en particulier, n'est plus à prouver<sup>1</sup>. Les multiples méthodes d'interprétation des réponses divines aux questions posées par les hommes ont donné lieu à une distinction entre divination inductive (artificielle ou interprétation par les signes) et intuitive (naturelle ou inspirée)<sup>2</sup>. La première forme, celle dont il sera question ici, consistait pour le devin à susciter l'apparition d'un signe à travers un vecteur préalablement choisi. La nature de ce vecteur pouvait varier grandement<sup>3</sup> : du comportement d'animaux terrestres (le serpent et le lézard, par exemple) ou d'oiseaux, en passant par les sorts (cléromancie), les songes (oniromancie), jusqu'à l'eau, comme dans

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<sup>1</sup> Bouché-Leclercq 1879-1882; Halliday 1913; Amandry 1950 ; Flacelière 1961; Parke 1967; Parke 1985 ; Heintz 1997.

<sup>2</sup> Cette distinction remonte à Platon, *Phèdre* 244 b-d.

<sup>3</sup> Il pouvait s'agir aussi de phénomènes naturels, de mots prononcés de façon involontaire (clédonomancie), de l'aspect des entrailles des animaux (hiéroskopie ou extispicine), notamment du foie (hépatoscopie), etc. Les mêmes types d'oracles ainsi que d'autres sont déjà attestés dans les textes hittites (Beal 2002).

le sanctuaire d'Apollon Thyrxéos près de Kyanées en Lycie ou dans celui de Déméter à Patrae, où l'on pratiquait la catoptromancie<sup>4</sup>.

Les poissons en tant qu'animaux oraculaires restent une exception dans le contexte égéen<sup>5</sup>. Cette situation n'est pas isolée dans la religion grecque : on sait, d'après les sources écrites, que les habitants du monde aquatique (marin et fluvial) faisaient rarement l'objet de sacrifices<sup>6</sup>. La « mise à l'écart » des poissons par rapport à certaines pratiques cultuelles ne signifie pas pour autant qu'ils ne jouaient aucun rôle dans la symbolique et la mythologie grecques, thème qui mériterait d'ailleurs d'être approfondi<sup>7</sup>.

De ce cadre général se détachent quelques attestations littéraires, d'époque hellénistique et surtout romaine, relatives à l'Anatolie sud-occidentale (notamment à la Lycie), où sont mentionnés des poissons oraculaires. Dans cette zone, ces animaux sont consacrés aux dieux et sont, par conséquent, l'objet d'attentions particulières<sup>8</sup>. En outre, à Soura et à Limyra, les poissons étaient considérés comme de véritables intermédiaires entre les dieux et les hommes, les instruments à travers lesquels la volonté divine se manifestait. Le prêtre n'avait qu'à observer les espèces qui apparaissaient et/ou leur comportement face aux offrandes jetées comme appâts dans le plan d'eau. Cette forme de divination, appelée ichthyomancie par Athénée<sup>9</sup>, paraît étrangère au panorama culturel grec<sup>10</sup>. Déjà dans l'Antiquité, on l'avait rapprochée de pratiques cultuelles attestées pour l'époque hellénistique-romaine dans le sanctuaire syrien de Hiérapolis/Bambyke, où se trouvaient des bassins aux poissons sacrés, nourriture réservée à la déesse<sup>11</sup>. Un cas de

<sup>4</sup> Paus. VII 21, 12-13. Cette pratique oraculaire se fonde sur l'interprétation des images réfléchies sur un miroir rapproché de l'eau (cf. Delatte 1932). Les Lyciens semblent avoir eu une prédilection particulière pour les oracles liés à l'eau, souvent dédiés à Apollon : Farnell 1907, p. 230.

<sup>5</sup> Cf. Plut., *De soll. an.* 975 b ; Bouché-Leclercq 1879, p. 151-152 ; Flacelière 1961, p. 15 ; Bodson 1978, p. 66. On se souviendra toutefois que le « Vieux de la Mer » est doté du pouvoir mantique : cf. Detienne 2006<sup>3</sup>, p. 85-90.

<sup>6</sup> Voir, en dernier lieu, Antonetti 2004, p. 170 et Lefèvre-Novaro à paraître, notamment sur la possibilité que l'archéologie modifie les perspectives. Il est à noter que, à l'époque gréco-romaine, la déesse d'origine syrienne Atargatis recevait habituellement des sacrifices de poissons (voir *infra*, p. 49).

<sup>7</sup> L'absence d'études récentes à ce propos a déjà été soulignée par Antonetti 2004, p. 165. Fondamentaux sur les animaux dans l'Antiquité, et notamment sur les poissons : Keller 1909-1913 ; Thompson 1947 ; Bodson 1978.

<sup>8</sup> Ils sont, par exemple, nourris avec les prémices des offrandes (cf. *infra*, p. 42). En Carie, dans le sanctuaire de Zeus à Labraunda, les poissons de la source (selon Pline, il s'agit d'anguilles) portent de petits colliers et des pendants d'oreilles en or, mais il n'y a aucune mention explicite d'un oracle : Pline, *NH* XXXII 16 ; Elien, *De nat. an.* XII 30 (cf. toutefois Laumonier 1958, p. 59-60 à propos de la dédicace du chresmologue Bryon à Zeus Labraundeus). Des poissons consacrés à une déesse anonyme (Atargatis?) sont attestés dans une inscription trouvée à Smyrne et datée du I<sup>er</sup> s. av. J.-C. : Sokolowski 1955 n. 17 avec commentaire. Enfin, pour la Mysie, Robert 1962<sup>2</sup>, p. 381 note 3, mentionne, à propos du village de Pamukcu (ancien Eftele), un bassin avec des poissons sacrés, mais sans plus de détails (pratique attestée de nos jours?). Pour les poissons sacrés en Lydie, cf. Varron, *De re rustica* III 17, 4. Ces cas ne sont pas nombreux en Égée : cf. Laumonier 1958, p. 98 ainsi que Pausanias I 38, 1 (lacs Rhéitoi) et VII 22, 4 (source de Pharai). Pour quelques explications à propos des interdictions alimentaires qui concernaient souvent la faune marine, cf. Antonetti 2004, p. 171-177.

<sup>9</sup> *Deip.* VIII 333 d.

<sup>10</sup> Burkert 1984, p. 169 cite l'oracle de Soura parmi ceux qui sont de tradition orientale.

<sup>11</sup> Pline, *NH* XXXII 17 ; Luc., *De dea Syria* 45 ; Elien, *De nat. an.* XII 2 ; Mnaseas *apud* Athén., *Deip.* VIII 346 d-e. Aucun de ces textes ne fait toutefois mention d'un rôle oraculaire joué par ces poissons ; l'oracle répondait aux interrogations des fidèles à travers les mouvements de la statue d'Apollon (Luc., *De dea Syria* 36). La déesse Atargatis/Derketo, associée à Aphrodite, avait aussi un célèbre lieu de culte à Ascalon (au pays des Philistins) où des poissons sacrés étaient nourris dans les viviers ; là non plus aucune trace d'ichthyomancie (Diod. II 4, 2-3 ; Ov., *Met.* IV 43-46).

poissons oraculaires est attesté en Egypte pendant la période romaine<sup>12</sup>. Pour l'Anatolie ancienne, quelque lumière sur l'origine de cette pratique pourrait venir de contextes géographiquement proches, mais bien plus anciens<sup>13</sup>. Il s'agit notamment d'une dizaine de textes hittites (fin XIV<sup>e</sup>-fin XIII<sup>e</sup> s. av. J.-C.) qui décrivent des consultations oraculaires très semblables à celles qui sont attestées en Lycie à l'époque gréco-romaine.

Notre analyse concernera tout d'abord les textes hittites sur les oracles MUŠ, peut-être à mettre en relation avec la région du Kizzuwatna, correspondant à la Cilicie classique. Seront analysées ensuite les données textuelles et archéologiques à propos de l'ichthyomancie en Anatolie à l'époque gréco-romaine. Nous essayerons par la suite de mettre en évidence les principales analogies entre ces deux corpus, tout en gardant à l'esprit l'importante distance chronologique qui les sépare.

#### PREMIERE PARTIE : LES ORACLES MUŠ DANS LES TEXTES CUNEIFORMES HITTITES La trace d'une tradition anatolienne de l'ichthyomancie ?

Dans un article de 1958,<sup>14</sup> l'hittitologue E. Laroche avait mis en évidence l'existence de quatre comptes rendus oraculaires en langue hittite dans lesquels une pratique divinatoire inconnue du reste du Proche-Orient ancien était dépeinte. Ces textes décrivaient le comportement d'animaux désignés par le sumérogramme MUŠ, que l'on traduit traditionnellement par « serpent ». Or, E. Laroche envisagea lui-même la possibilité que cet idéogramme soit employé dans ce contexte pour faire allusion à un poisson de forme reptilienne, à savoir l'anguille ou la murène<sup>15</sup>.

Dans cette section de notre article, je tenterai de m'assurer de la nature du MUŠ intervenant dans ces textes divinatoires hittites. Je chercherai plus précisément à confirmer ou infirmer l'identification du MUŠ à un poisson de type anguille. Dans le cas où cette identification s'avérerait correcte, ces quelques témoignages hittites offriraient un écho anatolien de premier ordre aux témoignages grecs discutés par D. Lefèvre dans le second volet du présent article.

Afin de parvenir à mener à bien cette enquête, il me paraît nécessaire de réexaminer en détails ces textes hittites dont le corpus a été augmenté depuis 1958. Je donnerai pour chacun de ces documents une édition complète car certaines de mes lectures divergent de celles d'E. Laroche, et les textes nouvellement découverts comme appartenant à ce corpus n'ont pas encore été traduits intégralement. Une seule exception doit être mentionnée dès maintenant : je n'éditerai pas les éventuels fragments inédits mentionnant les oracles MUŠ, car je n'ai pas la possibilité d'accéder à ces documents

<sup>12</sup> Cf. Gascoü à paraître dans les *Mélanges K.A. Worp*.

<sup>13</sup> L'hypothèse d'une origine pré-grecque a été mentionnée par Antonetti 2004, p. 167 note 14. Une prudente remarque de Parke 1985, p. 197 semble aller dans le même sens. L'idée avait été, par contre, rejetée par Farnell 1907, p. 230.

<sup>14</sup> Laroche 1958.

<sup>15</sup> Laroche 1958, 159 : « C'est donc en un élément aquatique que le 'serpent' évolue, et il ne peut être question de reptation. Je doute qu'il s'agisse proprement de 'serpent', malgré l'idéogramme MUŠ. [...] Outre l'anguille, le terme MUŠ a pu s'appliquer à d'autres poissons voraces et anguiformes, tels que la murène. » Cette interprétation a par la suite été suivie par Friedrich dans son *HW*, 2. *Ergänzungsheft* (1961), 31 : « MUŠ 'Schlange' ; auch 'Aal' ? (im Aal-Orakel) ». Elle n'a toutefois pas été retenue par Beal 2002, 74-75 qui propose une brève synthèse sur les oracles MUŠ.

dans l'immédiat. Par la suite, je chercherai les éléments présents dans les textes qui pourraient nous permettre de définir plus précisément le MUŠ et la technique oraculaire qui l'utilise.

## I. Edition des textes

L'ordre de présentation des tablettes qui vont être étudiées ici suit la numérotation du CTH d'E. Laroche ainsi que du CHT<sup>16</sup> de l'équipe du Chicago Hittite Dictionary. Ces textes ont tous été classés dans la catégorie « lécanomancie » (divination ayant lieu dans un bassin), au numéro 575 du CTH. L'interrogation divinatoire MUŠ a lieu dans un point d'eau ou bassin nommé *aldanni-*. Ce bassin est compartimenté mentalement ou concrètement en sections qui symbolisent un concept positif, négatif ou neutre. Tous les termes qui, dans mon édition, sont précédés d'une majuscule désignent ces concepts, ainsi que ceux véhiculés par le MUŠ lui-même.

### 1. CTH 575.1 : IBoT 1.33

Cette tablette à une seule colonne est datée par la graphie de l'époque LNS (= Late New Script), c'est-à-dire de la fin du XIII<sup>ème</sup> siècle avant J. –C. Ceci est particulièrement clair pour les signes *UL*, *INA*, *HA*, etc. qu'on y trouve. Elle est entièrement préservée à l'exception de quelques petites lacunes ici et là. Ce texte a été entièrement transcrit et traduit par E. Laroche mais mes lectures diffèrent parfois des siennes.

Ro

1. e-ni-za ku-it GISKIM<sup>HÁ</sup> HUL<sup>HÁ</sup> INA<sup>URU</sup> kum-ma-hi ki-ik-<sup>⌈</sup>kiš<sup>⌋</sup>-ša-at
2. nu-za a-pát-tan<sub>x</sub> ku-it EGIR-an H[U]L DÜ-at ki-nu-un-ma-za nam-ma ku-it
3. GISKIM<sup>HÁ</sup> H[U]L<sup>HÁ</sup> ki-ik<sup>17</sup>-kiš-ša-ri ŠA SAG.DU<sup>DUTU</sup><sup>Š</sup> HUL
4. i-še-eh-hi-iš-ká[n-z]i nu MUŠ SAG.DU<sup>DUTU</sup><sup>Š</sup> NU.SIG<sub>5</sub>-ah-du
5. MUŠ SAG.DU-kán : lu-lu-ti ŠUM-u-en na-aš-kán UGU DIB-za MU<sup>HÁ</sup> GÍD.DA
6. na-aš DUGUD<sup>18</sup>-ni mu-un-na-it 2 A-NA GUNNI UGU IŠ-BAT
7. na-aš-kán DUGUD-ni mu-un-na-it 3 har-ki ak-kán-ni ha-da-an-da-za GA[M]<sup>⌈</sup>da ú<sup>⌋</sup>-it
8. <sup>D</sup>gul-ša-aš DUGUD-ni mu-un-na-it SIG<sub>5</sub>

- 
9. ke-e-da-ni MU-ti NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán<sup>D</sup>U ŠUM<sup>⌈</sup>-en al<sup>⌋</sup>da-ni<sup>⌋</sup>
  10. an-da wa-ah-nu-ut na-aš-kán A-NA DINGIR<sup>LIM</sup> ANŠE.KUR.RA<sup>MES</sup> DU[GUD-n]i mu-un-na-<sup>⌈</sup>it<sup>⌋</sup>
  11. 2 GIG-za ú-it<sup>D30</sup> SIG<sub>5</sub> mu-un-na-it MUŠ an-na-liš<sup>is</sup>-kán
  12. A-NA É ha-da-an-da-za GAM-an-da ú-i[t MU.KA]M-ti mu-un-na-it SIG<sub>5</sub>
- 

13. nu INA MU.2.KAM-ma NU.ŠE-du MUŠ SAG.D[U-kán] A-NA GUNNI ŠUM-en
14. nu-kán A-NA<sup>D</sup>U KU<sub>6</sub> IŠ-BAT pal-la<sup>⌈</sup>T[I-ni]<sup>⌋</sup>e<sup>⌈</sup>ez-za-aš
15. 2 la-ah-la<sup>⌈</sup>-hi-ma-za ú-it n[a-aš-kán]<sup>⌈</sup>A<sup>⌋</sup>-NA EZEN<sub>4</sub><sup>MES</sup> DINGIR<sup>MES</sup> mu-un-na-it

<sup>16</sup> CTH = Laroche 1971 ; CHT = Catalog of Hittite Texts publié sur internet à l'adresse suivante : <http://www.asor.org/HITTITE/CTHHP.html>

<sup>17</sup> Un signe a été effacé entre IK et KIŠ.

<sup>18</sup> J'ai supprimé le point d'exclamation qu'E. Laroche avait placé après ce sumérogramme car le signe est complet.

16. 3 du-uš-ga-ra-na-za ú-i[t] É-<sup>ri</sup>D<sub>x</sub>-x<sup>19</sup> mu-un<-na>-it

17. nu INA MU.3.KAM-ma NU.SIG<sub>5</sub>-<sup>du</sup> MUŠ SAG.DU-kán A-NA <sup>D</sup>U har-ša-na-aš ŠUM-u-en

18. nu-kán KU<sub>6</sub> A-NA K[Á.LU]GAL IŠ-BAT na-an-kán A-NA MU.KAM-ti e-ez-za-aš

19. 2 EGIR.SUM-za ú-[i]t du-uš-ga-ra-ni mu-un-na-it

20. 3 BAL-<sup>[za]</sup> ar-ha ú-it <sup>D</sup>U har-ša-an-na-aš mu-[u]n-na-it

21. <sup>nu</sup> [INA M]U.4<sup>1</sup>.KAM<-ma> NU.SIG<sub>5</sub>-du MUŠ SAG.DU-[k]án A-NA É.LUGAL ŠUM-en

22. na-aš-kán UGU DIB-za A-NA <sup>D</sup>U hal-pa mu-un-na-i[t] 2 GIG-za ú-it

23. na-aš-kán DINGIR<sup>MES</sup>-aš EZEN<sup>MES</sup><sub>4</sub> mu-un-na-it 3 DINGIR<sup>MES</sup>-aš iš-ga-ra-na-za ú-it

24. A-NA <sup>D</sup>GAZ.BA.A.A KI.MIN SIG<sub>5</sub>

25. nu MU.5.KAM-ma NU.<sup>SIG<sub>5</sub></sup>-<sup>[d]</sup>u MUŠ SAG.DU-kán AMA.UZU.SI.NUMx<sup>U</sup> ŠUM-en

26. na-aš-kán UGU D[IB-za] pal-la TI-ni KI.MIN 2 <sup>D</sup>gul-ša-za ar-ha UGU DIB-za

27. EGIR.U<sub>4</sub><sup>M</sup> [KI.MIN] <sup>3</sup>TA MA-ME-TI ú-it : lu-lu-ti KI.MIN

28. nu MU.6.KAM-ma NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán DINGIR<sup>MES</sup>-aš iš-ga-ra-na-aš ŠUM-en

29. na-aš-kán UGU DIB-za <sup>D</sup>hi-iš-hu-ra mu-un-na-it 2 TA GIŠ.MAH ú-it

30. <sup>D</sup>30 SIG<sub>5</sub> DUGUD-ni KI.MIN TA MU.KAM-ti ú-it du-uš-ga-ra-<sup>ni</sup> KI.MIN

31. MU.7.KAM NU.ŠE-du MUŠ SAG.DU-kán A-NA <sup>D</sup>UTU TÚL-na ŠUM-en na-aš-kán UGU DIB-za

32. A-NA MU<sup>HA</sup> GÍD.DA KI.MIN 2 A-NA MU-ti ha-da-an-da-za ú-it

33. nu-kán al-da-ni an-da wa-ah-nu-ut É.LUGAL DUGUD-ni KI.MIN

34. 3 A-NA <sup>D</sup>U GAL UGU IŠ-BAT <sup>D</sup>gul-ša-aš DUGUD-ni KI.MIN

35. MU.8.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán TI-ni ŠUM-en nu UGU IŠ-BAT

36. al-da-ni an-da wa-ah-nu-ut MU<sup>HA</sup> GÍD.DA DUGUD-ni KI.MIN

37. 2 TA GIDIM<sup>HA</sup> ú-it al-da-ni an-da wa-ah-nu-ut <sup>D</sup>30 SIG<sub>5</sub><sup>20</sup> <KI.MIN>?

38. 3 EGIR.SUM-za ú-it É.LUGAL DUGUD-ni mu-un-na-it SIG<sub>5</sub>

39. MU.9.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán AMA.UZU.SI.NUMx<sup>U</sup> ŠUM-u-en

40. nu UGU IŠ-BAT al-da-ni-kán an-da wa-ah-nu-ut <sup>D</sup>UTU GAL KI.MIN

41. 2 a-aš-ka-za pí-an EGIR-pa ú-it DINGIR<sup>MES</sup>-aš iš-ga-ra-tar an-da pa-it

42. <sup>D</sup>U<sup>URU</sup> kum-ma DUGUD-ni KI.MIN 3 TA ŠU LÚ.U<sub>19</sub>.LU ar-ha ú-it

43. na-aš-kán UGU DIB-za <sup>D</sup>U hal-pa DUGUD-ni KI.MIN

44. MU.10.KAM NU.ŠE-du MUŠ SAG.DU-kán <sup>D</sup>U hal-pa ŠUM-u-en nu-kán al-da-ni an-[d]a  
<sup>wa</sup>ah-nu-ut

45. TI-ni KI.MIN 2 TA <sup>HUR.SAG</sup>da-ar-ú-te-na<sup>21</sup> ú-it TI-ni KI.MIN

46. 3 la-ah-la-ah-hi-ma-za ú-it EGIR.U<sub>4</sub><sup>M</sup> KI.MIN

<sup>19</sup> Peut-être à lire <sup>D</sup>hi-kán ? Cette lecture est tout à fait hypothétique car le signe se trouvant après HI est effacé. Une divinité Higa est attestée dans les textes de Boğazköy en langue hourrite (van Gessel 1998, 149) mais il est bien hasardeux d'affirmer que nous avons ici affaire à la même divinité. Par prudence, cette lecture ne sera donc pas prise en compte dans le commentaire.

<sup>20</sup> Ecrit par-dessus des signes effacés.

<sup>21</sup> Toponyme par ailleurs inconnu (RGTC 6, 409).



47. MU.11.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán MU<sup>HÁ</sup> GÍD.DA ŠUM-en al-da-ni an-da wa-ah-nu-ut  
 48. É.LUGAL mu-un-na-it 2 *A-NA* MU.KAM-ti ha-da-an-da-za GAM-da ú-it  
 49. : lu-lu-ti KI.MIN 3 TA AZAG ú-it <sup>D</sup>U GAL KI.MIN

- 
50. MU.12.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán *A-NA* GÍŠ.MAH ŠUM-u-en nu UGU IŠ-BAT  
 51. [n]a-aš-kán al-da-ni an-da wa-ah-nu-ut DUGUD-ni KI-MIN  
 52. 2 TA KÁ.LUGAL ú-it *INA* EGIR.U<sub>4</sub><sup>MI</sup> KI.MIN 3 e-eš-na-za [ú-it]  
 53. *A-NA* <sup>D</sup>IŠ<sup>T</sup>AR KI.MIN

Vo

54. MU.13.KAM NU.ŠE-du MUŠ SAG.DU-<kán> <sup>D</sup>UTU GAL ŠUM-en al-da-ni<sup>22</sup> an-da wa-ah-nu-ut  
 55. GÍŠ.MAH KI.MIN 2 a-aš-ka-za pí-an EGIR-pa ú-it na-aš-kán DINGIR<sup>MEŠ</sup> iš-ga<ra>-tar  
 56. an-da pa-it <sup>D</sup>LAMMA KI.MIN

- 
57. MU.14.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán <sup>D</sup>U wa-al-aš-x-wa-aš ŠUM-en  
 58. nu UGU IŠ-BAT al-da-an-ni an-da wa-ah-nu-ut <sup>D</sup>LAMMA KI.MIN  
 59. 2 du-uš-ga-ra-na-za ú-it du-uš-ga-ra-ni mu-un-na-it  
 60. 3 TA É.ŠÁ <sup>D</sup>LUGAL-ma ú-it AMA.UZU.Ú.BAR KI.MIN<sup>23</sup>

- 
61. MU.15.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán *A-NA* GUNNI ŠUM-en <sup>D</sup>U GAL KU<sub>6</sub> IŠ-BAT  
 62. pal-la TI-ni KI.MIN 2 la-ah-la-ah-hi-ma-za<sup>24</sup> ha-da-an-da-za GAM-an-da ú-it  
 63. <sup>D</sup>gul-ša-aš mu-un-na-it 3 GIG-za ar-ha ú-it <sup>D</sup>30 KI.MIN

- 
64. MU.16.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán *A-NA* É<sup>TI</sup> Š[U]M-en  
 65. na-aš-kán UGU DIB-za <sup>D</sup>U HAT-TI KI.MIN 2 EGIR-pa-SUM-ti ha-da-an-da-za  
 66. GAM-an-da ú-it *A-NA* KÁ.LUGAL KI.MIN

- 
67. MU.17.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán DINGIR GAL ŠUM-en nu UGU IŠ-BAT  
 68. [na-aš-k]án UGU DIB-za <sup>D</sup>UTU TÚL-na KI.MIN 3 TA GUNNI ú-it  
 69. [na-aš-ká]n <sup>D</sup>30 dam-me-li DUGUD-ni KI.MIN

- 
70. [MU.18.KA]M MUŠ<sup>25</sup> SAG.DU-kán *A-NA* KÁ.LUGAL ŠUM-en nu UGU IŠ-BAT  
 71. [nu-kán] al-da-an-ni an-da wa-ah-nu-ut na-aš-kán UGU DIB-za *A-NA* É.LUGAL KI.MIN  
 72. [2 *A-N*]A GIDIM ha-da-an-da-za GAM-da ú-it na-aš-kán UGU DIB-za  
 73. [DINGIR<sup>LIM</sup>] ANŠE.KUR.RA<sup>MEŠ</sup> KI.MIN 3 har-kán-na-za ak-kán-na-za ú-it {x}  
 74. [na-aš-k]án DINGIR<sup>MEŠ</sup>-aš iš-ga-ra-tar an-da pa-[it]<sup>D</sup>hé-pát <sup>D</sup>LUGAL-ma KI.MIN

- 
75. MU.19.KAM NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán [TI]<sup>1</sup>-ni ŠUM-en nu-kán UGU-za DIB-za  
 76. al-da-an-ni an-da wa-ah-nu-ut pal-la TI-ni KI.MIN 2 DINGIR<sup>MEŠ</sup>-aš iš-ga-ra-na-za  
 77. UGU DIB-za ú-it al-da-an-ni an-da wa-ah-nu-ut AMA.UZU.Ú.BAR DUGUD-ni KI.MIN  
 78. 3 du-uš-ga-ra-ni ha-an-da-te-za GAM-da ú-it *A-NA* MU-ti DUGUD-ni KI.MIN

<sup>22</sup> Signes inscrits sur une partie effacée au préalable.

<sup>23</sup> Inscrit sur une partie effacée.

<sup>24</sup> Les deux derniers signes sont inscrits sur une zone où des signes ont été effacés. La même observation peut être faite pour les signes composant les deux termes suivants de la ligne.

<sup>25</sup> Inscrit par-dessus un signe effacé.



79. MU.20.KAM NU.ŠE-du MUŠ SAG.DU-kán *A-NA* <sup>D</sup>U ŠUM-u-en nu UGU IŠ-BAT  
 80. na-aš-kán UGU DIB-za GIŠ.MAH TI-ni KI.MIN 2 a-aš-ka-za pí-an EGIR-pa ú-it  
 81. DINGIR<sup>MEŠ</sup> iš-ga-ra-tar an-da pa-it <sup>D</sup>LAMMA KI<. MIN> MUŠ<sup>26</sup> an-na-al-li-ma-kán  
 82. TA BAL ú-it KÁ.LUGAL DUGUD-ni KI.MIN SIG<sub>5</sub>
- 
83. e-ni ku-it <sup>f</sup>mi-iz-zu-ul-la-aš <sup>MUNUS.MEŠ</sup>ŠU.GI-ya me-mi-ir *A-NA* <sup>D</sup>UTU<sup>ŠI</sup>-wa  
 84. MU.4<. KAM> MU.8.KAM NU.SIG<sub>5</sub> e-ni-iš-ša-an-za i-wa-ar <sup>MUNUS</sup>ŠU.GI DÙ-ri NU.SIG<sub>5</sub>-du  
 85. [MUŠ] SAG.DU *A-NA* <sup>D</sup>U ŠUM-en nu-kán du-uš-ga-ra-ni UGU<sup>1</sup> IŠ-BAT  
 86. [na-aš-k]án UGU DIB-za *A-NA* MU-ti KI.MIN 2 TA MU<sup>HA</sup> GÍD.DA ar-ha UGU DIB-za ú-it  
 87. *I-NA* EGIR.U<sub>4</sub><sup>MI</sup> KI.MIN<sup>1</sup> 3<sup>1</sup> GIŠ.MAH ú-it na-aš-kán <sup>D</sup>gul-ša-aš  
 88. DUGUD-ni KI.MIN SIG<sub>5</sub>
- 
89. <sup>f</sup>e<sup>1</sup>-ni-za ku-<sup>f</sup>e<sup>1</sup> GISKIM<sup>MEŠ</sup> HUL<sup>MEŠ</sup> ki-ik-kiš-ša-ri nu-za ma-a-an ku-it im-ma ku-it  
 90. na-at GAM ar-ha GAR-ru ma-a-an-ma-an U<sub>4</sub><sup>MI</sup> <sup>D</sup>UTU<sup>ŠI</sup> ma-a-an-za  
 91. lu-u-ri-in te-ep-nu-um-mar-ra UL u-uh-hi SIG<sub>5</sub>-ru MUŠ SAG.DU-kán  
 92. : lu-lu-ti ŠUM-en nu UGU [I]Š-BAT al-da-an-ni an-da wa-ah-nu-ut na-aš-kán  
 AMA.UZU.Ú.BAR  
 93. DUGUD-ni KI.MIN 2 TA KÁ.L[UGAL ar-ha] UGU DIB-za ú-it du-uš-ga-ra-ni KI.MIN  
 94. 3 TA MU-ti ša-ra-a DIB-za <sup>f</sup>ú-it<sup>1</sup> n[u :] lu-lu-ti KI.MIN SIG<sub>5</sub>
- 
95. e-ni-za GISKIM<sup>MEŠ</sup> HUL<sup>MEŠ</sup> ku-wa-at-tin še-er ki-ik-kiš-ša-ri KUR<sup>HA</sup> HAT-TI har-ak-zi  
 96. NU.SIG<sub>5</sub>-du MUŠ SAG.DU KUR HAT-TI-kán *A-NA* DINGIR<sup>MEŠ</sup> EZEN<sub>4</sub><sup>MEŠ</sup> ŠUM-en nu  
 UGU IŠ-BAT  
 97. nu-kán al-da-an-ni an-da wa-ah-nu-ut na-aš-kán [...]da KI.MIN  
 98. 2 a-aš-ka-za pí-an EGIR-pa ú-it na-aš-kán UGU [DIB-za] <sup>f</sup>É<sup>1</sup>.LUGAL KI.MIN  
 99. 3 a-aš-ka-za pí-an EGIR-pa <ú-it> nu-kán UGU DIB-za al-da-an-ni an-[da] w[a-ah-nu-ut]  
 100. na-aš-kán *A-NA* MU<sup>HA</sup> GÍD.DA KI.MIN
- 
101. nu {x} ŠA {x} SAG.DU <sup>D</sup>UTU<sup>ŠI</sup>-ma SAG.DU-aš har-kán uš-ki-ši<sup>27</sup> DINGIR<sup>LUM</sup>-ma-at-ši-kán  
 102. ša-an-ni-iš-ki-ši nu MUŠ SAG.DU <sup>D</sup>UTU<sup>ŠI</sup> NU<sup>28</sup>.SIG<sub>5</sub>-ah-du MUŠ SAG.DU <sup>D</sup>UTU<sup>ŠI</sup>-kán  
 103. *A-NA* MU<sup>HA</sup> GÍD.DA ŠUM-en na-aš-kán TI-ni : lu-lu-ti nu ša-ra-a e-ep-ta  
 104. na-aš-kán UGU DIB-za *A-NA* KÁ.LUGAL DUGUD-ni KI.MIN *A-NA* GUNNI KU<sub>6</sub> e-ep-ta  
 105. : lu-lu-ti e-ez-za 3 TA <sup>D</sup>SIG<sub>5</sub> ú-it TI-ni KI.MIN SIG<sub>5</sub>
- 
106. ÌR<sup>MEŠ</sup> ZI-ni-[ká]n<sup>?</sup> ku-it ak-kiš-kán-ta-ri DINGIR<sup>LUM</sup>-at *A-NA* NÍ.TE <sup>D</sup>UTU<sup>ŠI</sup>  
 107. HUL-<sup>f</sup>tar<sup>1</sup> ú-da-an har-ti NU.SIG<sub>5</sub>-du nu MUŠ SAG.DU <sup>D</sup>UTU<sup>ŠI</sup>  
 108. NU.SIG<sub>5</sub>-du MUŠ SAG.DU-kán *A-NA* GUNNI ŠUM-en nu UGU IŠ-BAT  
 109. nu-kán al-da-an-ni an-da wa-ah-nu-ut AMA.UZU.Ú.BAR KI.MIN  
 110. 2 la-ah<-la>-hi-ma-za UGU-za DIB-za ú-it <sup>D</sup>UTU TÚL-na DUGUD-ni KI.<sup>f</sup>MIN<sup>1</sup>  
 111. <sup>f</sup>e<sup>1</sup>-ni ŠA <sup>D</sup>LAMMA na-an<sup>29</sup> ŠA <sup>D</sup>LAMM[A *A-NA* SAG.D]U <sup>D</sup>UTU<sup>ŠI</sup> GISKIM-iš ak-kán-[na-  
 a]š<sup>?</sup>-ma MU ka-ru-ú ma-ni-in-ku-u-wa-an

<sup>26</sup> Inscrit sur un signe effacé.<sup>27</sup> Inscrit au-dessus de la ligne.<sup>28</sup> Inscrit sur un signe effacé.<sup>29</sup> Inscrit sur une partie effacée.

112. [nu] MUŠ SAG.DU <sup>D</sup>UTU<sup>ŠT</sup> NU.SIG<sub>5</sub>-du MUŠ [SAG.DU-kán] A-NA GUNNI ŠUM-en nu  
UGU IŠ-BAT al-da-ni an-da wa-ah-nu-ut AMA.UZU.Ú.BAR DUGUD-ni KI.MIN  
113. 2 pal-la TI-ni ha-da-an-da-za GAM-an-da <sup>1</sup>u<sup>1</sup>-[it K]Á.LUGAL <sup>1</sup>DUGUD<sup>1</sup>-ni KI.MIN <3> TA  
<sup>D</sup>30 SIG<sub>5</sub> [a]r-ha ú-it TI-ni mu-un-na-it  
114. SIG<sub>5</sub>

Ro

1. Voici que de mauvais présages se sont produits dans la ville de Kummaha.
  2. Du fait que le mal s'y est reproduit, et du fait que
  3. les mauvais présages se reproduisent maintenant,
  - 3-4. (ceux-ci) annoncent-ils le mal pour la tête<sup>30</sup> de Mon Soleil<sup>31</sup> ?
  4. (Si c'est le cas), que le MUŠ de la tête de Mon Soleil soit défavorable.
  5. Nous avons appelé<sup>32</sup> le MUŠ de la tête dans le *lulu*<sup>33</sup>. Il (s'est) tenu en haut<sup>34</sup> et (il est allé aux) Longues Années.
  6. (Puis) il s'est caché dans l'Importance<sup>35</sup>. Deux(ièmement) : (le MUŠ) s'est tenu en haut au Foyer
  7. et il s'est caché dans l'Importance. Trois(ièmement) : il est descendu de l'Arme à la Mort
  8. et il s'est caché dans l'Importance des Gulšeš<sup>36</sup>. (C'est) favorable.
- 
9. Que pour cette année, (cela) soit défavorable. Nous avons appelé le MUŠ de la tête (au) Dieu de l'Orage. Dans le bassin
  10. il s'est tourné et il s'est caché dans l'Importance à la Divinité des Chevaux.
  11. Deux(ièmement) : il est venu de la Maladie et il s'est caché au Dieu Lune Favorable. Le MUŠ précédent
  12. est descendu de l'Arme à la Maison, il s'est caché dans l'Anné[e]. (C'est) favorable.
- 
13. Que (cela) soit défavorable pour la deuxième année. Nous avons appelé le MUŠ de la tête au Foyer.
  14. Il a attrapé un poisson au Dieu de l'Orage et il l'a mangé au *palla* à la Vie<sup>37</sup>.
  15. Deux(ièmement) : il est venu de l'Agitation et il s'est caché aux Fêtes des Dieux.
  16. Trois(ièmement) : il est venu de la Joie et il s'est caché dans le Temple du Dieu ...
- 

<sup>30</sup> L'expression SAG.DU « la tête » sert souvent à désigner l'ensemble de la personne.

<sup>31</sup> Titulature réservée dans les textes hittites au Grand Roi de Hattuša, la capitale de l'empire. Il faut remarquer que l'ensemble de ces comptes rendus d'oracles MUŠ concernent directement le roi hittite, ce qui ne peut nous surprendre étant donné que ces textes ont été mis au jour dans la ville haute de Hattuša. Leur existence même ainsi que leur archivage à Hattuša ne s'expliquent que parce qu'ils concernent le Grand Roi.

<sup>32</sup> Cette expression « nous avons appelé le MUŠ au/à ... » est récurrente dans tous les textes de ce corpus. D'après E. Laroche, elle serait à interpréter par un geste consistant pour l'homme à lâcher les MUŠ dans un bassin (Laroche 1958, 160). Je pense quant à moi que le verbe ŠUM = *lamniya*- « appeler » peut avoir une autre signification : peut-être les observateurs humains du MUŠ utilisent-ils un appât destiné à l'attirer dans une section particulière du bassin *aldanni*-. S'agit-il d'un petit poisson tel que celui mentionné à plusieurs reprises dans nos textes comme étant attrapé puis avalé par le MUŠ ?

<sup>33</sup> Le terme louvite *lulu(i)*- est attesté dans d'autres textes hittites. Il désigne visiblement une condition favorable (prospérité, guérison ?) sans qu'il soit possible de préciser laquelle (CHD L-N, 84-85).

<sup>34</sup> Pour le sens de cette expression UGU DIB-za = *šarā appanza*, voir Laroche 1958, 160.

<sup>35</sup> DUGUD signifie en premier lieu l'adjectif « important, vénérable » ou le nom « importance, dignité » (hittite *nakkiyatar*) mais E. Laroche 1958, 162 a préféré le traduire par « respect ».

<sup>36</sup> Déesses du destin en Anatolie hittite.

<sup>37</sup> Pour cette expression *palla* TI-ni, au sens inconnu de nous, voir Laroche 1958, 162.

17. Que (cela) soit défavorable pour la troisième année. Nous avons appelé le MUŠ de la tête au Dieu de l'Orage de la Tête.
  18. Il a attrapé un poisson à la Po[rte du R]oi et il l'a mangé à l'Année.
  19. Deux(ièmement) : il est venu du EGIR.SUM, il s'est caché dans la Joie.
  20. Trois(ièmement) : il est sorti de la Révolte, il s'est caché au Dieu de l'Orage de la Tête.
- 
21. Que (cela) soit défavorable pour la quatrième année. Nous avons appelé le MUŠ de la tête au Palais.
  22. Il s'est tenu en haut, il s'est caché au Dieu de l'Orage d'Alep. Deux(ièmement) : il est venu de la Maladie
  23. et il s'est caché aux Fêtes des Dieux. Trois(ièmement) : il est venu de la Pointe des Dieux
  24. (et) idem à la divinité GAZ.BA.A.A. (C'est) favorable.
- 
25. Que (cela) soit défavorable pour la cinquième année. Nous avons appelé le MUŠ de la tête au AMA.UZU.SI.NUMxÚ.
  26. Il s'est tenu en haut, idem au *palla* à la Vie. Deux(ièmement) : il s'est tenu en haut hors des Gulšeš
  27. (et) [idem] à l'Avenir. Trois(ièmement) : il est venu du Serment (et) idem au *lulut-*.
- 
28. Que (cela) soit défavorable pour la sixième année. Nous avons appelé le MUŠ de la tête aux Pointes des Dieux.
  29. Il s'est tenu en haut, il s'est caché à la divinité Hišhura. Deux(ièmement) : il est venu de la Poutre.
  30. (et) idem à l'Importance du Dieu Lune Favorable. (Troisièmement) : il est venu de l'Année (et) idem à la Joie.
- 
31. Que (cela) soit défavorable (pour) la septième année. Nous avons appelé le MUŠ de la tête à la Déesse Soleil d'Arinna. Il s'est tenu en haut
  32. (et) idem aux Longues Années. Deux(ièmement) : il est venu de l'Arme à l'Année
  33. et dans le bassin il s'est tourné. Idem à l'Importance du Palais.
  34. Trois(ièmement) : il s'est tenu en haut au Grand Dieu de l'Orage (et) idem à l'Importance des Gulšeš.
- 
35. Que (cela) soit défavorable (pour) la huitième année. Nous avons appelé le MUŠ de la tête à la Vie. Il s'est tenu en haut,
  36. dans le bassin il s'est tourné. Idem à l'Importance des Longues Années.
  37. Deux(ièmement) : il est venu des Esprits défunts, dans le bassin il s'est tourné. <Idem>? au Dieu Lune Favorable.
  38. Trois(ièmement) : il est venu du EGIR.SUM, il s'est caché dans l'Importance du Palais. (C'est) favorable.
- 
39. Que (cela) soit défavorable (pour) la neuvième année. Nous avons appelé le MUŠ de la tête au AMA.UZU.SI.NUMxÚ.
  40. Il s'est tenu en haut, dans le bassin il s'est tourné. Idem au Grand Dieu Soleil.
  41. Deux(ièmement) : il est revenu en face en provenance de la Porte (et) il est entré à la Pointe des Dieux.
  42. Idem à l'Importance du Dieu de l'Orage de Kumma. Trois(ièmement) : il est parti de la Main d'Homme.
  43. Il s'est tenu en haut (et) idem à l'Importance du Dieu de l'Orage d'Alep.
-

44. Que (cela) soit défavorable (pour) la dixième année. Nous avons appelé le MUŠ de la tête au Dieu de l'Orage d'Alep. Dans le bassin il s'est tourné.  
 45. Idem à la Vie. Deux(ièmement) : il est venu du Mont Darutena (et) idem à la Vie.  
 46. Trois(ièmement) : il est venu de l'Agitation (et) idem à l'Avenir.

- 
47. Que (cela) soit défavorable (pour) la onzième année. Nous avons appelé le MUŠ de la tête aux Longues Années. Dans le bassin il s'est tourné,  
 48. il s'est caché (dans) le Palais. Deux(ièmement) : il est descendu de l'Arme dans l'Année  
 49. (et) idem au *lulut-*. Trois(ièmement) : il est venu du Tabou (et) idem au Grand Dieu de l'Orage.

- 
50. Que (cela) soit défavorable (pour) la douzième année. Nous avons appelé le MUŠ de la tête à la Poutre. Il s'est tenu en haut.  
 51. Dans le bassin il s'est tourné (et) idem à l'Importance.  
 52. Deux(ièmement) : il est venu de la Porte du Roi (et) idem dans l'Avenir. Trois(ièmement) : il est venu du Sang?  
 53. (et) idem à Šaušga.

Vo

54. Que (cela) soit défavorable (pour) la treizième année. Nous avons appelé le MUŠ de la tête au Grand Dieu Soleil. Dans le bassin il s'est tourné.  
 55. Idem à la Poutre. Deux(ièmement) : il est revenu en face en provenance de la Porte (et) il est entré dans la Pointe des Dieux.  
 56. Idem au Dieu Tutélaire.

- 
57. Que (cela) soit défavorable (pour) la quatorzième année. Nous avons appelé le MUŠ de la tête au Dieu de l'Orage de ...  
 58. Il s'est tenu en haut, dans le bassin il s'est tourné (et) idem au Dieu Tutélaire.  
 59. Deux(ièmement) : il est venu de la Joie (et) il s'est caché dans la Joie.  
 60. Trois(ièmement) : il est venu de la Chambre de Šarruma (et) idem au AMA.UZU.Ú.BAR.

- 
61. Que (cela) soit défavorable (pour) la quinzième année. Nous avons appelé le MUŠ de la tête au Foyer. Il a attrapé un poisson au Grand Dieu de l'Orage.  
 62. Idem au *palla* à la Vie. Deux(ièmement) : il est descendu de l'Agitation (et) l'Arme  
 63. (et) il s'est caché aux Gulšeš. Trois(ièmement) : il est parti de la Maladie (et) idem au Dieu Lune.

- 
64. Que (cela) soit défavorable (pour) la seizième année. Nous avons appelé le MUŠ de la tête à la Maison.  
 65. Il s'est tenu en haut (et) idem au Dieu de l'Orage de Hatti. Deux(ièmement) : il est descendu de l'Arme au EGIR.SUM  
 66. (et) idem à la Porte du Roi.

- 
67. Que (cela) défavorable (pour) la dix-septième année. Nous avons appelé le MUŠ de la tête au Grand Dieu. Il s'est tenu en haut.  
 68. Il s'est tenu en haut (et) idem à la Déesse Soleil d'Arinna. Trois(ièmement) : il est venu du Foyer.  
 69. Idem au Dieu Lune (et) à l'Importance d'un autre.
-

70. (Pour) la [dix-huitième anné]e. Nous avons appelé le MUŠ de la tête à la Porte du Roi. Il s'est tenu en haut.
71. Dans le bassin il s'est tourné. Il s'est tenu en haut (et) idem au Palais.
72. [Deux(ièmement)] : il est descendu de l'Arme à l'Esprit défunt. Il s'est tenu en haut
73. (et) idem [à la Divinité] des Chevaux. Trois(ièmement) : il est venu de la Mort
74. [et] il est entré dans la Pointe des Dieux (et) idem à Hepat et Šarruma.
- 
75. (Que) cela soit défavorable (pour) la dix-neuvième année. Nous avons appelé le MUŠ de la tête à la Vie. Il s'est tenu en haut,
76. dans le bassin il s'est tourné (et) idem au *palla* à la Vie. Deux(ièmement) : il est venu de la Pointe des Dieux
77. en se tenant en haut. Dans le bassin il s'est retourné (et) idem à l'Importance du AMA.UZU.Ú.BAR.
78. Trois(ièmement) : il est descendu de l'Arme à la Joie (et) idem à l'Importance (et) à l'Année.
- 
79. Que (cela) soit défavorable (pour) la vingtième année. Nous avons appelé le MUŠ de la tête au Dieu de l'Orage. Il s'est tenu en haut.
80. Il s'est tenu en haut (et) idem à la Poutre, à la Vie. Deux(ièmement) : il est revenu en face en provenance de la Porte,
81. il est entré dans la Pointe des Dieux. Idem au Dieu Tutélaire. Le MUŠ précédent
82. est venu de la Révolte (et) idem à l'Importance de la Porte du Roi. (C'est) favorable.
- 
83. Voici que Mezzulla et les Vieilles Femmes ont dit : « Pour Mon Soleil
84. la quatrième (et) la huitième années (sont) défavorables. » (Cela) se produira-t-il de cette façon comme (l'a dit) la Vieille Femme ? (Si c'est le cas), que (ce) soit défavorable.
85. Nous avons appelé le MUŠ de la tête au Dieu de l'Orage. Il s'est tenu en haut dans la Joie.
86. Il s'est tenu en haut (et) idem à l'Année. Deux(ièmement) : il est parti des Longues Années en se tenant en haut.
87. Idem à l'Avenir. Trois(ièmement) : il est venu à la Poutre et
88. idem à l'Importance des Gulšeš. (C'est) favorable.
- 
89. Voici les mauvais présages qui se produisent. Si (c'est) quoi que ce soit,
90. que cela soit écarté, mais si (ce sont) les jours de Mon Soleil (ou) si
91. je ne vois pas la disgrâce et l'humiliation, que ce soit favorable.
92. Nous avons appelé le MUŠ de la tête au *lulut-*. Il s'est tenu en haut. Dans le bassin il s'est tourné et
93. idem à l'Importance du AMA.UZU.Ú.BAR. Deux(ièmement) : il est parti de la Porte du [Roi] en se tenant en haut (et) idem à la Joie.
94. Trois(ièmement) : il est venu de l'Année en se tenant en haut et idem au *lulut-*. (C'est) favorable.
- 
95. Ces mauvais présages, pourquoi se produisent-ils ? Les pays de Hatti vont-ils périr ?
96. (Si c'est le cas), que (ce) soit défavorable. Nous avons appelé le MUŠ de la tête du pays de Hatti aux Fêtes des Dieux. Il s'est tenu en haut.
97. Dans le bassin il s'est retourné et idem ...
98. Deux(ièmement) : il est revenu en face en provenance de la Porte et il s'est [tenu] en haut. Idem au Palais.

99. Trois(ièmement) : il est revenu en face en provenance de la Porte et il s'est tenu en haut. Dans le bassin il s'est tourné

100. et idem aux Longues Années.

---

101. Sur la tête de Mon Soleil : vois-tu la mort de (sa) tête et (toi), ô dieu, le lui

102. caches-tu ? (Si c'est le cas), que le MUŠ de la tête de Mon Soleil soit défavorable.

102-103. Nous avons appelé le MUŠ de la tête de Mon Soleil aux Longues Années.

103. (Il était) à la Vie et au *lulut-*. Il s'est tenu en haut.

104. Il s'est tenu en haut (et) idem à l'Importance de la Porte du Roi. Il a attrapé un poisson au Foyer

105. (et) il (l')a mangé au *lulut-*. Trois(ièmement) : il est venu du Dieu Favorable (et) idem à la Vie. (C'est) favorable.

---

106. Du fait que les serviteurs ... meurent en nombre,

106-107. ô dieu, as-tu apporté le mal sur le corps de Mon Soleil ? (Si c'est le cas), que (ce) soit défavorable.

107-108. Que le MUŠ de la tête de Mon Soleil soit défavorable.

108. Nous avons appelé le MUŠ de la tête au Foyer. Il s'est tenu en haut.

109. Dans le bassin il s'est tourné (et) idem au AMA.UZU.Ú.BAR.

110. Deux(ièmement) : il est venu de l'Agitation en se tenant en haut (et) idem à l'Importance de la Déesse Soleil d'Arinna.

111. Cela (provient) du Dieu Tutélaire. (C'est) le présage du Dieu Tutélaire [pour la tête] de Mon Soleil. Mais l'année de (sa) mort (est-elle) déjà proche ?

112. (Si c'est le cas), que le MUŠ de la tête de Mon Soleil soit défavorable. Nous avons appelé le MUŠ de [la tête] au Foyer. Il s'est tenu en haut, dans le bassin il s'est tourné (et) idem à l'Importance du AMA.UZU.Ú.BAR.

113. Deux(ièmement) : il est descendu de l'Arme au *palla* à la Vie, idem à l'Importance de la Porte du Roi. <Trois(ièmement)> : il est parti du Dieu Lune Favorable, il s'est caché à la Vie.

114. (C'est) favorable.

## 2. CTH 575.2 : KUB 22.38

Cette tablette à une seule colonne est à moitié cassée. Elle a comme principal intérêt de combiner trois techniques oraculaires : l'oracle MUŠ, les sorts KIN et l'ornithomancie. Elle date de l'époque NS (fin du XIV<sup>e</sup> et début du XIII<sup>e</sup> siècles avant J.-C.). Seule une partie du Ro a été transcrite et traduite par E. Laroche.

Ro

1. [...]-x ku-it DINGIR GAL <sup>†</sup>TUKU.TUKU<sup>†</sup>-u-an-za nu A-NA DINGIR<sup>LIM</sup> [ku-i]t

2. <sup>†</sup>me<sup>†</sup>-eq-qa-uš IK-RI-BI<sup>HA</sup> me-ma-an har-mi

3. na-at GAM-an ar-ha GAR-ru ma-a-an-ma-kán tu-uk

4. A-NA DINGIR<sup>LIM</sup> ta-me-e-da-az Ú-UL ku-it-ki da-li-ya-an

5. nu <sup>TUL</sup>al-dan-ni-eš SIG<sub>5</sub>-ru MUŠ GUNNI-iš-kán wa-aš-du-li pa-it

6. pa-ra-a-ma-aš iš-ha-na-aš le-e[n]-ki-ya-aš A-NA <sup>NA4</sup>ZI.KIN<sup>38</sup>

7. an-da-an pa-it ta-ma-[i]š-ma-kán M[U]Š GUNNI-iš

8. IŠ-TU É.LUGAL pa-ra-a ú-it na-aš-kán la-ah-la-hi-mi pa-[it]

9. a-pé-ez-ma-aš-kán ŠÀ É.EN.NU.UN pa-it <sup>†</sup>pa<sup>†</sup>-ra-a-ma-aš

<sup>38</sup> Inscrit sur des signes préalablement effacés.

10. *A-NA* GIDIM<sup>HÁ</sup> GAM-an pa-it 1 MUŠ GUNNI-iš-ma-kán

11. ...]-wa-za pa-ri-an ú-it na-aš-[ká]n ha-da-<sup>†</sup>an-za<sup>?</sup>]<sup>†</sup>x

12. pa]-it NU. SIG<sub>5</sub><sup>†</sup>

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13. ]x-li-ya-u-ar x x x [

14. ] ta-ma-a-i NU.GÁL [

15. <sup>TÚL</sup>al]-dan-ni-eš SIG<sub>5</sub>-[r]u [

16. ] x ú-e-er na-x [

---

17. ] *A-NA* DINGIR<sup>LIM</sup> EME [

18. <sup>TÚL</sup>a]-dan-ni-iš x [

19. [ar-h]a pa-a-er [

---

20. ...]-an da-li-[...

21. <sup>†</sup>nu <sup>TÚL</sup>al]-dan-ni-eš [SIG<sub>5</sub>-ru

22. ar-ha ú-it [

23. 2 MUŠ-ma-kán x [

---

24. nu-za-kán DINGIR<sup>LUM</sup> [

25. [NU.S]IG<sub>5</sub>-du MU[Š

26. ] x x [

---

Vo

3'. ] NU.S[IG<sub>5</sub>]

---

4'. ...]-e-da-an [

5'. ]x-iš pa-i[t

6'. ...]-it [

---

7'. ...]-la-hi-ti-ša-an x-iš-kat-te-[...

8'. ...]-ki pa-ra-a pa-it MUŠ-ma-x [

9'. ] NU.SIG<sub>5</sub>

---

10'. SI]G<sub>5</sub>-ru SIG<sub>5</sub>

11'. ] ma-al-x x x TI x<sup>39</sup> [

12'. ]x-zi EGIR-pa ú-da-an-zi ki-[...

13'. p]i-an EGIR-pa ú-it ta-ma-i[š

14'. ] x x [...] :<sup>?</sup> lu-lu-ti pa-it 2 nu-ú-ma-ká[n

15'. x SIG<sub>5</sub> pa-x x [...] É.LUGAL pa-it SIG<sub>5</sub>

---

16'. [IŠ-T]U<sup>MUNUS</sup>ŠU.GI IR<sup>TUM</sup> QA-TAM-MA-pát nu KIN SIG<sub>5</sub>-ru LUGAL-uš-za ZAG-tar da-pí-a[n

17'. [da]-<sup>†</sup>a<sup>†</sup>-aš nu-kán EGIR-pa<sup>GIS</sup>DAG-ti *I-NA* U<sub>4</sub>.2.KAM pa-an-ku-uš-za ZAG-tar É-aš-ša [

18'. ]x da-a-aš nu-kán DINGIR<sup>LIM</sup>-ni da-pí-i ZI-ni *I-NA* U<sub>4</sub>.3.KAM LUGAL-uš-za x [

19'. [EG]IR-an ar-ha wa-aš-túl da-a-aš na-at *A-NA* <sup>D</sup>UTU AN<sup>E</sup> pa-iš SIG<sub>5</sub>

<sup>39</sup> Il semble que le scribe ait voulu effacer cette ligne mais de nombreuses traces sont restées. Une ligne de séparation de paragraphe a également été rajoutée tardivement.

- 
- 20'. [I]Š-TU<sup>LÚ</sup> IGI.DÙ IR<sup>TUM</sup> QA-TAM-MA-pát nu MUŠEN<sup>HÁ</sup> SIxSÁ-an-du TI<sub>8</sub><sup>MUŠEN</sup>-kán pí-an SIG<sub>5</sub>  
 21'. [n]a-aš 2-an ar-ha pa-it KA<sub>5</sub>.A-ma-kán EGIR UGU SIG<sub>5</sub>-za ú-it  
 22'. [n]a-aš-kán pí-an ar-ha pa-it EGIR.KASKAL-ni TI<sub>8</sub><sup>MUŠEN</sup>-kán EGIR UGU SIG<sub>5</sub>-za  
 23'. ú-it na-aš-kán pí-an<sup>1</sup> ar-ha pa-it  
 24'. UM-MA<sup>1</sup>ir-ha-[A.A<sup>240</sup>] SIxSÁ-at-wa

Ro

1. [Est-ce] à cause [de cela] que la grande divinité (est) en colère ? [Etant donné qu]e
  - 1-2. j'ai prononcé de nombreux vœux à la divinité,
  3. que cela soit écarté (de la présente interrogation oraculaire). Si
  4. rien n'a été négligé par (quelqu'un) d'autre pour toi, la divinité,
  5. que les bassins soient favorables. Le MUŠ du foyer est allé à la Faute
  - 6-7. et en outre il est entré à la Stèle du Sang (et) du Serment.
  7. Un autre MUŠ du foyer
  8. est venu en face en provenance du Palais et il est allé à l'Agitation.
  9. De là il est allé dans la Prison. En outre
  10. il est descendu aux Esprits défunts. Un MUŠ du foyer
  11. est venu d'au-delà de ...
  - 11-12. et il est allé [...] de l'Arme.
  12. (C'est) défavorable.
- 

13. ] ... [
  14. ] il n'y a pas d'autre [
  15. ]que les bassins soient favorables [
  16. ] sont venus ... [
- 

17. ] à la divinité la Langue [
  18. ] bassin [
  19. ] sont partis [
- 

20. ] ... [
  21. Que les bassins [soient favorables
  22. est parti [
  23. Deux(ièmement) : le MUŠ [
- 

24. La divinité [
  25. soit défavorable. Le MU[Š
  26. ] ... [
- 

Vo

- 3'. ] défavorable [
- 

- 4'. ] ... [
  - 5'. ] est allé [
- 

<sup>40</sup> Devin connu par d'autres comptes rendus oraculaires (Laroche 1966, 80 n°461).



6'. ] ... [

7'. ] ... [

8'. ] est allé devant. Le MUŠ [

9'. ] (C'est) défavorable.

10'. que] ce soit favorable. (C'est) favorable.

11'. ] ... [

12'. ] ils ramènent. ... [

13'. ] est revenu en face. Un autre [

14'. ] ... [...] est allé au *lulut-*. Deux(ièmement) : ... [

15'. favorable ... [...] est allé au Palais. (C'est) favorable.

16'. La même question (a été posée) par la Vieille Femme. Que les sorts soient favorables. Le Roi [...] la Faveur entière

17'. a pris et il (l'a) re(donné) au Trône. Le deuxième jour, la Communauté [...] la Faveur de la Maison [

18'. ] a pris et (l'a donné) à la Divinité (et) à l'Ame entière. Le troisième jour, le Roi ... [

19'. a retiré la Faute et l'a donnée au Dieu Soleil du Ciel. (C'est) favorable.

20'. La même question (a été posée) par l'ornithomancien. Que les oiseaux (le) déterminent. Un aigle (a volé) en face d'un bon (vol)

21'. et il est parti au milieu. L'oiseau KA<sub>5</sub>.A est revenu en haut d'un bon (vol)

22'. et il est parti en face. Derrière le chemin, un aigle est revenu en haut d'un bon (vol)

23'. et il est parti en face.

24'. Ainsi (parle) Irha-[muwa<sup>2</sup>] : « (Cela) a été déterminé. »

### 3. CTH 575.3 : KUB 49.2 (+<sup>2</sup>) KUB 18.6

Selon A. Archi<sup>41</sup>, ces deux fragments de tablettes de graphie NS (fin XIVème-début XIIIème siècle) formeraient un joint indirect. P.H.J. Houwink ten Cate<sup>42</sup> a pensé que ce texte faisait allusion à la cérémonie de couronnement du roi Tuthaliya IV, interprétation suivie plus tard par T. van den Hout<sup>43</sup> qui édita ce texte.

i

1'. ] AŠ [

2'. ]x ITI x [

3'. t]i-ya-z[i

4'. ] QA-TAM-MA TI [

5'. ...-y]a pa-ra-a

6'. [ar-ha Ū-UL z]a-<sup>l</sup>lu-ga<sup>l</sup>-nu-um-me-e-ni

7'. ]x x x-aš DINGIR<sup>LUM</sup> HUL-u-i

8'. [an-da-an] Ū-UL ne-ya-ši nu<sup>D</sup>hi-iš-hu-ra-aš

9'. ]x MUŠ ŠUM LUGAL-kán IŠ-TU MU.KAM<sup>HÁ</sup> GÍ[D.DA]

<sup>41</sup> Archi 1979, Inhaltübersicht n°2.

<sup>42</sup> Houwink ten Cate 1996, 71-72 note 56.

<sup>43</sup> van den Hout 1998, 114-123.

- 10'. [ú-it] na-aš-kán GUNNI pa-it  
 11'. [na-aš-ká]n ku-ra-ak-ki pa-it  
 12'. [na-aš-za] ku-ra-ak-ki kar-ap-ta  
 13'. ]x nu-kán GUNNI KU<sub>6</sub>-un e-ep-ta  
 14'. ]x GUNNI-pát GAM : pa-aš-ta  
 15'. [na-aš-kán] TI-an-ni pa-it nu KAxU-iš ar-ha  
 16'. [e-ep-t]a nu EGIR-pa BAL-nu-ut  
 17'. [nu-kán] x GUNNI ú-it nu nam-ma  
 18'. [KU<sub>6</sub>-un] e-ep-ta na-an GAM : pa-aš-ta  
 19'. [MUŠ] ŠUM LUGAL-ma-za a-ra-aš kar-ap-ta  
 20'. [MU]Š a-ri-ya-š[e-eš]-na-aš-ma-kán GUNNI-za ú-it  
 21'. [nu]<sup>D</sup>U<sup>URU</sup>hal<sup>]</sup>pa an-[d]a KAR-at  
 22'. ]x pa-it na-aš-kán GUNNI  
 23'. ]x-ta-ri na-aš-kán ku-ra-ak-ki  
 24'. [pa-it nu-kán Š]À É.LUGAL pa-it  
 25'. ...]-nu-ut nu la-ah-la-hi-im-ma<sup>]</sup>an<sup>]</sup>  
 26'. ]x nu-za EGIR-pa ME-aš  
 27'. p]a-it nu nam-ma KU<sub>6</sub> [  
 28'. ku-r]a-ak-ki [

## KUB 18.6 i

- 1'. ]x-ya x x  
 2'. ]x SIG<sub>5</sub>

- 
- 3'. ]x-da-ni-i-ma  
 4'. ...-z]i nu-kán ma-ah-ha-an  
 5'. AŠ]-SUM<sup>244</sup> LUGAL-UT-TI  
 6'. ...-z]i nu-uš-ši-kán pa-ra-a  
 7'. ...-z]i nu GIM-an A-NA<sup>D</sup>UTU<sup>Š</sup>  
 8'. a-ri-ya-še-eš-na-za SIxSÁ-ri  
 9'. nu-za-kán a-pu-u-un pí-an ar-ha {x x x}  
 10'. pé-eš-ši-ya-zi a-pa-a-aš-ma-za-kán  
 11'. QA-TAM-MA e-ša-ri ma-a-an-ma-za x  
 12'. QA-TAM-MA ma-la-a-an x x  
 13'. A-NA<sup>D</sup>UTU<sup>Š</sup> U<sub>4</sub><sup>]</sup>KAM<sup>HA</sup> ITI.KAM<sup>HA</sup>  
 14'. ke-e-ez-za INIM-za Ú-[UL  
 15'. ma-ni-in-ku-wa-x x x x x-zi  
 16'. nu DINGIR x x [...] SIG<sub>5</sub> x x  
 17'. MUŠ ŠUM LUGAL x [...] x x a-ú-um-me-e[n]  
 18'. x har-ak-x [...] x x nu-kán<sup>D</sup>UTU DINGIR x  
 19'. ] na-aš-kán ku-ra-ak-ki x x  
 20'. ] na-aš kar-ap-ta  
 21'. ] MUŠ A-NA GUNNI  
 22'. ] na-an a-pí-ya-pát  
 23'. ] MUŠ a-ri-ya-še-eš-na-aš-ma-[k]án

<sup>44</sup> Pour cette lecture voir van den Hout 1998, 116 note 30.

- 24'. ] nu <sup>D</sup>U pí-ha-<sup>am</sup>-mi-in  
 25'. ] x x e-ez-za-ma  
 26'. ] <sup>MUŠ</sup>an-da KAR-at

## KUB 49.2 ii

- 2'. [n]u MUŠ [  
 3'. a-pa-a-aš-k[án  
 4'. MUŠ ku-iš [  
 5'. ti-ya-an-za [  
 6'. a-ú-um-me-en [  
 7'. pa-it nu EGIR [  
 8'. na-aš-kán ti-a[n-...  
 9'. ha-da-an-ti x [  
 10'. MUŠ ŠUMLUGAL-m[a  
 11'. nu-kán a-pa-a-[...  
 12'. ar-ha ME [  
 13'. na-aš-ká[n  
 14'. na-aš-ká[n  
 15'. na-aš[  
 16'. na-[...  
 17'. x [

## KUB 18.6 ii

- 1'. nu-za E[GI]R-pa ME-aš [  
 2'. na-aš-kán ku-ra-a[k-ki  
 3'. MUŠ ŠUMLUGAL-ma [  
 4'. na-aš-kán A-NA [  
 5'. na-aš-kán A-NA [  
 6'. na-aš-kán A-NA [  
 7'. x x x lu-lu-[ti'  
 8'. na-aš [  
 9'. n[a'-...

- 19''. nu [  
 20''. nu [  
 21''. nu-uš-[...  
 22''. nu-uš-x [  
 23''. MUŠ [  
 24''. nu-za [  
 25''. na-[...  
 26''. na-[...
- 

## KUB 18.6 iii

- 6'. na-[...  
 7'. x [  
 8'. x [

## KUB 49.2 iii

- 1'. na-[...]
- 2'. na-an [
- 3'. nu-kán [
- 4'. *A-NA*<sup>D</sup>U [
- 5'. na-an-kán [
- 6'. na-an *A-N*[*A*
- 7'. MUŠ *ŠUM* [
- 8'. a-ú-um-[me-en
- 9'. pa-it x [
- 10'. [na-an] [

## KUB 18.6 iv

1. [G]IM-an-kán lu-lu-ti pé-e-da-aš
  2. a<-pé>-e-ez-za-ma-aš-kán *I-NA* EGIR.U<sub>4</sub>.KAM {pa-it}
  3. pa-it na-aš-kán TI-an-ni pa-it
  4. na-aš-kán *A-NA* MU.KAM<sup>HÁ</sup> GÍD.DA pa-it
  5. MUŠ ta-ma-a-iš-ma-kán *A-NA* GUNNI
  6. KU<sub>6</sub>-un e-ep-ta (partie effacée)
  7. na-an-kán *A-NA*<sup>D</sup>U<sup>URU</sup>tal-ma-li-ya
  8. pé-e-da-aš na-an a-pí-ya {x}
  9. GAM har-ak-ta MUŠ *ŠUM*LUGAL-ma-kán
  10. ŠÀ É.LUGAL pa-it {x x x x}
  11. na-an-za-an MUŠ a-ri-ya-še-eš-na-aš
  12. kar-ap-ta SIG<sub>5</sub>
- 

## i

- 1'. ] ... [
- 2'. ] mois [
- 3'. ] se tient [
- 4'. ] de même manière [
- 5'. ] ...
- 6'. nous ne retarderons pas
- 7'-8'. ]... ô dieu, tu ne te tourneras pas vers le Mal.
- 8'. La divinité Hišhura
- 9'-10'. ] Le MUŠ du nom du roi [est venu] des Lo[ngues] Années
- 10'. et il est allé au Foyer.
- 11'. Il est allé au Pilier
- 12'. et il s'est élevé au Pilier.
- 13'. ]... Il a attrapé un poisson au Foyer
- 14'. ] il (l')a avalé au Foyer.
- 15'. Il est allé à la Vie et la Bouche
- 16'. a pris. Il s'est à nouveau rebellé
- 17'. et il est venu ... Foyer.
- 18'. Il a rattrapé [un poisson] et l'a avalé.

19'. Le [MUŠ] du nom du roi *s'est élevé* aux Amis.  
 20'. Le [MU]Š de l'oracle est venu du Foyer  
 21'. et il a atteint le Dieu de l'Orage d'Alep.  
 22'. ] ... est allé et ... Foyer  
 23'-24'. ] ... [Il est allé] au Pilier.  
 24'. Il est allé dans le Palais  
 25'. ] ... à l'Agitation  
 26'. ]... Il s'est repris.  
 27'-28'. ] est allé. Ensuite [il a attrapé] un poisson  
 28'. ] au Pilier [

## KUB 18.6 i

1'. ] ...  
 2'. ] (C'est) favorable.

---

3'. ] ...  
 4'. ] ... Comme  
 5'. ] *au sujet de* la royauté  
 6'. ] ... Pour lui  
 7'. ] ... Comme pour Mon Soleil  
 8'. il a été déterminé par un oracle,  
 9'-10'. il rejettera cela.  
 10'. Mais lui  
 11'. s'assoira de même. Si ...  
 12'. ... approuvé de même,  
 13'. pour Mon Soleil les jours, les mois  
 14'. par cette affaire ne (seront) pas  
 15'. (plus) courts ...,  
 16'. que la divinité ... favorable  
 17'. Le MUŠ du nom du roi nous avons vu.  
 18'. ... [...] ... Le Dieu Soleil ... la divinité  
 19'. ] ... au Pilier  
 20'. ] *il s'est élevé*  
 21'. ] Le MUŠ au Foyer  
 22'. ] et là  
 23'. ] Le MUŠ de l'oracle  
 24'. ] Le Dieu de l'Orage *pihammi*  
 25'. ] il a mangé.  
 26'. ] le MUŠ a atteint

## KUB 49.2 ii

2'. Le MUŠ [  
 3'. Lui [  
 4'. Le MUŠ qui [  
 5'. se tenant [  
 6'. nous avons vu [

- 7'. il est allé. Ensuite [
- 8'. il ... [
- 9'. à l'Arme [
- 10'. Le MUŠ du nom du roi [
- 11'. Lui [
- 12'. a retiré [
- 13'. Il [
- 14'. Il [
- 15'. Il [
- 16'. ... [
- 17'. ... [

## KUB 18.6 ii

- 1'. Il s'est repris. [
- 2'. Au Pilier il [
- 3'. Le MUŠ du nom du roi [
- 4'. Pour ... il [
- 5'. Pour ... il [
- 6'. Pour ... il [
- 7'. au *lulut*- [
- 8'. il [
- 9'. ...[

19''-26''. Passage trop fragmentaire.

---

## KUB 18.6 iii

6'-8'. Passage trop fragmentaire.

## KUB 49.2 iii

- 1'. ... [
- 2'. ... le [
- 3'. Et [
- 4'. au Dieu de l'Orage [
- 5'. ... le [
- 6'. ... le ... à [
- 7'. Le MUŠ du nom [
- 8'. nous avons vu [
- 9'. il est allé. ... [
- 10'. ... le [

## KUB 18.6 iv

- 1. Comme il (l')a emporté au *lulut*-,
- 2. il est allé de là dans l'Avenir.
- 3. Il est allé dans la Vie.
- 4. Il est allé aux Longues Années.

- 5-6. Mais un autre MUŠ a attrapé un poisson au Foyer.  
 7-8. Il l'a emporté au Dieu de l'Orage de la ville de Talmaliya  
 8. et là ...  
 9. il est mort. Le MUŠ du nom du roi  
 10. est allé dans le Palais.  
 11-12. Le MUŠ de l'oracle l'a élevé.  
 12. (C'est) favorable.
- 

4. CTH 575.4 : KUB 22.19<sup>45</sup>

Ce fragment a été mentionné par E. Laroche qui ne l'a toutefois pas édité.

- 1'. ] SIG<sub>5</sub> [  
 2'. ] ar-[...  
 3'. n]a-aš-kán [  
 4'. ]x-uš-ga-[...  
 5'. ] pal-la [  
 6'. ] (vacat) [
- 

- 7'. MUŠ Š]U LÚ-ma har-ak-[...  
 8'. NU].SIG<sub>5</sub>-du MUŠ ŠU [LÚ  
 9'. ] al-ta-an-ni an-da [  
 10'. ]x na-aš-kán ANA É DI NA [  
 11'. ]x DINGIR<sup>LUM</sup>-ma-kán TA MU.KAM [  
 12'. ] EGIR-pa SUM-an-ti še-er ha-da-[an-da'  
 13'. N]U.SIG<sub>5</sub>
- 

- 14'. ]x MUŠ ŠU LÚ NU.SIG<sub>5</sub> [  
 15'. MU]Š ŠU LÚ-kán TA É [  
 16'. ] IŠ-BAT<sup>1</sup>na-aš-kán<sup>1</sup> [  
 17'. ] x x [
- 

- 1'. ] favorable [  
 2'. ] ... [  
 3'. ] ... le [  
 4'. ] ... [  
 5'. ] au *palla* [  
 6'. ] (vacat) [
- 

- 7'. Le MUŠ de la m]ain de l'homme ... [  
 8'. soit dé]favorable. Le MUŠ de la main [de l'homme  
 9'. ] dans le bassin [  
 10'. ] et il ... [

<sup>45</sup> Je suis ici la numérotation d'E. Laroche.

- 11'. ] La divinité ... de l'Année [  
 12'. ] redonné (dat.-loc.), sur l'Arme [  
 13'. (C'est) d]éfavorable.

- 
- 14'. ] ... Le MUŠ de la main de l'homme ... défavorable [  
 15'. Le MU]Š de la main de l'homme de la Maison [  
 16'. ] a attrapé. Il [  
 17'. ] x x [  


---

### 5. CTH 575.5 : KBo 23.117

Cette tablette date de l'époque LNS et n'a pas encore fait l'objet d'une édition.

Ro

1. <sup>[D]</sup>UTU<sup>ŠI</sup>-za-ká[n ...] tu-uk <sup>D</sup>U-ti EGIR-pa [  
 2. ma-a-an-ma-za <sup>D</sup>UTU-na-aš MU<sup>HÁ</sup> ku-it a-pé-ez di-...  
 3. MUŠ <sup>D</sup>U-ti MUŠ SAG.DU MUŠ MU<sup>HÁ</sup> ku-it [  


---

4. IR<sup>TUM</sup> kiš-an-pát ma-a-an-ma-za <sup>D</sup>UTU<sup>ŠI</sup> ÚŠ-an x [  
 5. MUŠ <sup>D</sup>U-ti MUŠ SAG.DU MUŠ ÚŠ-aš SIG<sub>5</sub> še-e[r  


---

6. IR<sup>TUM</sup> kiš-an-pát ma-a-an-ma-za LUGAL GIG a-pé-ez UL KA[R-zi  
 7. MUŠ <sup>D</sup>U-ti MUŠ SAG.DU MUŠ GIG SIG<sub>5</sub> še-er x [  


---

8. IR<sup>TUM</sup> kiš-an-pát ma-a-an-ma-za <sup>D</sup>UTU<sup>ŠI</sup> : ar-pa-an-...  
 9. MUŠ <sup>D</sup>U-ti MUŠ SAG.DU MUŠ : ar-pa-aš SI[G<sub>5</sub>  


---

10. tu-uk-za-kán <sup>D</sup>U <sup>[</sup>INIM<sup>?</sup>] IZI EGIR-pa x [  
 11. a-pé-ez UL KAR-zi 3 ŠE x [  
 12. [M]UŠ SAG.DU MUŠ MU<sup>HÁ</sup> x x [  


---

13. ] ma-a-an-ma-za LUGAL ÚŠ-an [  


---

14. ] <sup>[</sup>SIG<sub>5</sub> <sup>]</sup> [  


---

Vo

- 1'. ] A[N  
 2'. ]x ŠUM[  
 3'. lam-ni-ya-u-x [...] nu [  
 4'. na-aš-kán A-NA <sup>[</sup>GIG <sup>]</sup> na-...  


---

- 5'. INA 2 KASKAL-<sup>[</sup>ni<sup>]</sup> 4 SIG<sub>5</sub>-ru MU[Š  
 6'. MUŠ MU-ti-ma-kán EGIR-pa x [  


---

- 7'. INA 3 KASKAL-ni 4 SIG<sub>5</sub>-ru {x BAD} MUŠ [  
 8'. MUŠ <sup>D</sup>hé-pát-ma-kán A-NA GID[IM  


---

- 9'. INA 4 KASKAL-ni 4 SIG<sub>5</sub>-ru MUŠ hé-pát x [  


---



10'. MUŠ MU-ti-ma-kán DINGIR<sup>MEŠ</sup>-aš TUKU.TUKU-ti n[a]-aš-ká[n]

---

11'. <sup>D</sup>UTU<sup>Š</sup> kiš-an DÙ-zi A-NA GIDIM-kán BE-LU<sup>HÁ</sup> GAL [  
 12'. INA<sup>URU</sup> kum-man-ni-ma-za SISKUR<sup>MEŠ</sup> pí-an ar-ha DIB-an-t[a-...  
 13'. nu <sup>D</sup>hé-pát KASKAL-an-zi <sup>D</sup>UTU<sup>Š</sup>-ma-za SISKUR<sup>MEŠ</sup> MU-a[n-...  
 14'. ma-a-an-ma<sup>MUNUS</sup> GIG-aš a-pé-ez-za TI-eš-zi GIDIM UT [  
 15'. a-w[a-a]n ar-ha ti-ya-zi 4 SIG<sub>5</sub>-ru MUŠ <sup>D</sup>hé-pá[t  
 16'. MUŠ G]IDIM MUŠ MU-ti SIG<sub>5</sub>

---

17'. [INA 5<sup>2</sup> KASKAL-n]i 4 SIG<sub>5</sub>-ru MUŠ <sup>D</sup>hé-pát MUŠ ŠUM MUŠ GIDIM [  
 18'. [INA 6<sup>2</sup> KASKAL-n]i 4 SIG<sub>5</sub>-ru MUŠ <sup>D</sup>hé-pát [MUŠ<sup>1</sup> [  


---

19'. [INA 7<sup>2</sup> KASKAL]-ni 4 SIG<sub>5</sub>-ru MUŠ <sup>D</sup>hé-pát [  


---

bord

1. ]x UL BAL-nu-zi 2 SIG<sub>5</sub>-ru [  
 2. M]UŠ LUGAL UN<sup>746</sup> MU-ti SI[G<sub>5</sub>  
 3. M]UŠ pa-i[t

Ro

1. Mon Soleil [...] à toi, le dieu Soleil ... à nouveau [  
 2. Si (c'est) du fait que les années du dieu Soleil ... de là [  
 3. Du fait que le MUŠ du dieu Soleil, le MUŠ de la tête (et) le MUŠ des années [  


---

4. La question (que l'on a posée est) ainsi : si Mon Soleil ... la mort [  
 5. Le MUŠ du dieu Soleil, le MUŠ de la tête (et) le MUŠ de la mort. (C'est) favorable. Sur [  


---

6. La question (que l'on a posée est) ainsi : si le roi ne rencontre pas de là la maladie [  
 7. Le MUŠ du dieu Soleil, le MUŠ de la tête (et) le MUŠ de la maladie. (C'est) favorable. Sur [  


---

8. La question (que l'on a posée est) ainsi : si Mon Soleil ... [  
 9. Le MUŠ du dieu Soleil, le MUŠ de la tête et le MUŠ du *arpa-*. (C'est) favorable. [  


---

10. Toi, le dieu de l'orage, l'affaire du feu ... à nouveau [  
 11. de là il ne rencontre(ra) pas. Trois(ièmement) : ... [  
 12. Le [M]UŠ de la tête, le MUŠ des années ... [  


---

13. ] Si le roi ... la mort [  


---

14. ] favorable [  


---

Vo

1'. ] ... [  
 2'. ] nom [  
 3'. (v. nommer) [...] et [  


---

<sup>46</sup> On aurait préféré un signe MUŠ ici, mais le signe présent sur la tablette paraît trop différent.

4'. Il ... à la Maladie [

---

5'. Dans le deux(ième) chemin, que quatre soient favorables. Le MUŠ [Š

6'. Le MUŠ de l'année ... à nouveau [

---

7'. Dans le trois(ième) chemin, que quatre soient favorables. ... Le MUŠ [

8'. Le MUŠ de Hepat à l'Esprit d[éfunt

---

9'. Dans le quatr(ième) chemin, que quatre soient favorables. Le MUŠ de Hepat ... [

10'. Le MUŠ de l'année (est allé) à la Colère des Dieux et il [

---

11'. Mon Soleil fera-t-il ainsi ? A l'Esprit défunt les grands seigneurs [

12'. Dans la ville de Kummanni, les offrandes [ont été] retirées [

13'. On a transporté Hepat et Mon Soleil [...] les offrandes de l'année [

14'. Si de là la malade vivra (= guérira), l'Esprit défunt ... [

15'. désertera. Que quatre soient favorables. Le MUŠ de Hepat [

16'. Le MUŠ de l'es]prit défunt (et) le MUŠ de l'année. (C'est) favorable.

---

17'. [Dans le cinq(uième)<sup>?</sup> chemin], que quatre soient favorables. Le MUŠ de Hepat, le MUŠ du nom, le MUŠ de l'esprit défunt [

18'. [Dans le six(ième)<sup>?</sup> chemin], que quatre soient favorables. Le MUŠ de Hepat, le MUŠ [

---

19'. [Dans le sept(ième)<sup>?</sup> chemin], que quatre soient favorables. Le MUŠ de Hepat [

bord

1. ] il ne se rebelle pas, que deux soient favorables [

2. Le M]UŠ du roi ... l'année. (C'est) favorable. [

3. Le M]UŠ est allé [

## 6. CTH 575.6 : KUB 49.1

Ro

2. ] kán [

3. ] <sup>D</sup>UTU<sup>ŠI</sup> x x-ni hu- [...

4. [M]UŠ SAG.DU-kán ti-la-x [

5. [M]UŠ pu-ru-ul-li-kán É.LU[GAL

6. MUŠ AN.TAH.ŠUM-kán EGIR.U<sub>4</sub><sup>MI</sup> [

7. [M]UŠ ITI.8.KAM-kán du-uš-k[a-ra-...

8. MUŠ EZEN<sub>4</sub><sup>MES</sup> tar-na-aš-kán ti- [...

---

9. DINGIR<sup>MES</sup>-za ku-it SIG<sub>5</sub> 1 ti-r[a-...

10. MUŠ SAG.DU-kán É.LUGAL [

11. MUŠ TI-aš-kán MU<sup>HÁ</sup> GÍD.DA [

12. MUŠ <sup>URU</sup>zi-pa-la-kán EGIR.U<sub>4</sub><sup>MI</sup> [

13. še-er<sup>I</sup> UN<sup>I?</sup>-ma-kán <sup>D</sup>gul-za S[IG<sub>5</sub><sup>?</sup>

---

14. nu <sup>URU</sup>ne-ri-iq-qa-ma ku-wa-pí [

15. MUŠ SAG.DU-kán <sup>I</sup>TI-ni ŠUM-en x [

16. MUŠ TI-aš-kán É.LU[GAL] ŠUM-en na-aš-ká[n]  
 17. MUŠ<sup>URU</sup> ne-<sup>ri</sup>-qa<sup>!?</sup> x x-uš-kán MU[  
 18. na-aš-kán DINGIR<sup>MES</sup> x [...]-ti na-aš-kán [

19. nu-za INA<sup>É</sup> he-eš-t[i ... ] x BI INA TI-[...  
 20. MUŠ SAG.DU-kán [...] x-pí-ra-ti ŠUM-en [  
 21. MUŠ TI-aš-kán EGIR.U<sup>4</sup><sup>[M]</sup> ŠUM-en na-aš-kán [  
 22. [M]UŠ pu-ru-ul-li-ma ŠA<sup>É</sup> he-eš-<sup>ti</sup>-kán x [  
 23. nu-kán<sup>GIŠ</sup><KÁ> LUGAL x GU<sup>7</sup> INA [  
 24. na-aš-kán<sup>GIŠ</sup> KÁ LUGAL KI.MIN [

25. x x x-kán KUR<sup>URU</sup> [a]z-zi [  
 26. MUŠ x-qa-kán x [

Vo

- 2'. [MUŠ ...] pal-la TI-ni ŠUM-en  
 3'. MUŠ ...] x ANA LUGAL ŠUM-en na-aš-kán<sup>D</sup>U [

- 4'. <sup>ri</sup>MUŠ x-la-kán MU<sup>HÁ</sup> GÍD.DA ŠUM-en na-aš-ká[n

- 5'. <sup>D</sup>UTU<sup>ŠT</sup> <sup>ri</sup>kiš<sup>ri</sup>-an DÙ-zi A-NA MU-ti-kán uš<sup>?</sup>-[...  
 6'. nu-za INA<sup>URU</sup> kum-man-ni SISKUR<sup>MES</sup> DÙ-zi nu-za<sup>D</sup>x [  
 7'. na-aš INA<sup>URU</sup> kum-man-ni pa-iz-zi na-aš-kán IZ x [  
 8'. nu-kán<sup>URU</sup> HAT-TI UGU ú-iz-zi nu-za la-[...  
 9'. nu<sup>URU</sup> ne-ri-ik har-pí-uš nu INA<sup>URU</sup> kum-man-n[i  
 10'. MUŠ SAG.DU-kán É.LUGAL ŠUM-en na-aš-kán [  
 11'. MUŠ MU-ti-kán EGIR.U<sup>4</sup><sup>M</sup> ŠUM-en na-aš-kán [  
 12'. MUŠ<sup>D</sup> hé-pát x x-kán ŠUM-en na-aš-kán [  
 13'. [M]UŠ DINGIR<sup>LUM</sup> <sup>URU</sup>a<sup>ri</sup>-ru-uš-na-kán EGIR.U<sup>4</sup><sup>M</sup> [ŠUM-en  
 14'. MUŠ x-x-la-uš-kán pal-la TI-ni [ŠUM-en

- 15'. UM-MA<sup>1</sup> x ki-i-wa [k]u-it [  
 16'. DINGIR<sup>LUM</sup> <sup>URU</sup>a<sup>ri</sup>-ru<sup>1</sup>-uš-na DUMU.MUNUS x [  
 17'. x x x-eš-ki-iz-zi [

- 18'. nu <sup>ri</sup>kiš<sup>ri</sup>-an-ma DÙ-an-[zi?  
 19'. [k]e-e-da-ni pé-di x [  
 20'. nu<sup>URU</sup> ne-<sup>ri</sup>-iq-qa [  
 21'. nu-kán<sup>URU</sup> kum-man-[ni  
 22'. [M]UŠ SAG.DU-kán [  
 23'. [M]UŠ SISKUR<sup>MES</sup> <sup>URU</sup>[...  
 24'. GÚ-ŠÚ wa-ga-aš [  
 25'. MUŠ<sup>URU</sup> kum-man-[ni

Ro

2. ] ... [  
 3. ] Mon Soleil ... [

4. Le [M]UŠ de la tête ... [
  5. Le [M]UŠ du *purulli* ... au Palais [
  6. Le MUŠ de l'AN.TAH.ŠUM ... à l'Avenir [
  7. Le [M]UŠ du huitième mois ... Joi[e
  8. Le MUŠ des fêtes du *tarna-* ... [
- 

9. Du fait que les dieux (sont) favorables, ... [
  10. Le MUŠ de la tête ... au Palais [
  11. Le MUŠ de la vie ... aux Longues Années [
  12. Le MUŠ de la ville de Zipala(nda) ... à l'Aveni[r
  13. sur ... la déesse Gulša ... *favo[rable*
- 

14. La ville de Nerik où [
  15. Nous avons appelé le MUŠ de la tête à la Vie. [
  16. Nous avons appelé le MUŠ de la vie au Palais et il [
  17. Le MUŠ de la ville de Nerik ... [
  18. et il ... les dieux et il [
- 

19. Dans le *hešti-*, ... [
  20. Nous avons appelé le MUŠ de la tête [...] ... [
  21. Nous avons appelé le MUŠ de vie à l'Avenir et il [
  22. Le [M]UŠ du *purulli* du *hešti-* ... [
  23. La Porte du roi ... manger dans [
  24. et il idem à la Porte du roi [
- 

25. ... le pays de la ville d'Azzi [
26. Le MUŠ ... [

Vo

- 2'. Nous avons appelé le [MUŠ ...] au *palla* à la Vie
  - 3'. Nous avons appelé le [MUŠ ...] au Roi et il ... au Dieu de l'Orage [
- 

- 4'. Nous avons appelé le MUŠ ... aux Longues Années et il [
- 

- 5'. Mon Soleil fera-t-il ainsi ? A l'Année [
  - 6'. Dans la ville de Kummanni il fera les offrandes et la divinité ... [
  - 7'. Il ira dans la ville de Kummanni et il ... [
  - 8'. Il montera à Hattuša et ... [
  - 9'. La ville de Nerik ... Dans la ville de Kummanni [
  - 10'. Nous avons appelé le MUŠ de la tête au Palais et il [
  - 11'. Nous avons appelé le MUŠ de l'année à l'Avenir et il [
  - 12'. Nous avons appelé le MUŠ de Hepat ... et il [
  - 13'. [Nous avons appelé le M]UŠ du Dieu de la ville d'Arušna à l'Avenir [
  - 14'. [Nous avons appelé] le MUŠ ... au *palla* à la Vie [
- 

- 15'. Ainsi (a parlé) ... : « Voici que [
- 16'. le dieu de la ville d'Arušna ... la fille [

17'. ... [

---

18'. ... *fera-t-on* ainsi ? [

19'. dans ce lieu [

20'. La ville de Nerik [

21'. La ville de Kummanni [

22'. Le [M]UŠ de la tête [

23'. Le [M]UŠ des offrandes de la ville de ... [

24'. Il a mordu son cou [

25'. Le MUŠ de la ville de Kummanni [

### 7. CTH 575.7 : KUB 50.72 + KBo 53.107

Tablette LNS qui a fait l'objet d'un joint récent. Ce texte n'a pas encore été édité.

i

1. ...]-ni-ma ma-ni-in-ku-u-wa-a[n

2. ]gul-ša-aš DUGUD KI.MIN še-er [

3. E]ZEN<sub>4</sub> DINGIR<sup>LIM</sup> ú-it TI-ni INA x [

---

4. ]x-ti ka-ru-ú me-eq-qa-uš x [

5. ]x MU.KAM GÍD.DA na-aš-kán A-NA DINGIR [

6. n]u-kán x x DUGUD-i KI.MIN TA x [

---

7. ...]-ma me-eq-qa-uš a-ša-an-zi x [...] x [

8. ]x EZEN<sub>4</sub> DINGIR<sup>LIM</sup> DIB-ta na-an-ká[n ...] x [

9. n]a-aš MU.KAM GÍD.DA KI.MIN har-da-[... ] ú-it [

---

10. ]x-an SIG<sub>5</sub>-zi [...] M]UŠ SAG.DU-kán TI-ni ŠUM-u-e[n

11. ]x DUGUD KI.[MIN ...]x-za du-uš-qa-ra-te ud-da-a-za x [

12. ] nam-ma [...] -ni KI.MIN ŠE

---

13. ] x [...] NU].SIG<sub>5</sub>-du MUŠ SAG.<sup>[DU]</sup>-kán x [

14. K]I.MIN še-er-<<er>>-za-ma-kán la-ah-l[a-...

15. K]I.MIN EGIR-pa-SUM-za ú-it du-u[š<sup>?</sup>-...

---

16. ]x-re-eš-ki-iz-zi pít-tu-li x [

17. ...-a]š na-aš-kán É.ŠÀ LUGAL-ma [

18. ]x har-kán<sup>LÚ</sup> pít-ni-x-it[

---

19. ...]-ma har-zi NU.SI[G<sub>5</sub>

20. ]x-ha DIB-ta<sup>D</sup>x [

21. ]x-la-za ú-it [

22. ]KI.MIN [

---

23. ] x x [

ii

x+1. nu-x-kán x [  
 2'. <sup>1</sup>EGIR<sup>1</sup>-an pa-i[t  
 3'. na-aš-kán DINGIR [  
 4'. ud-da-a-za ú-it x [

---

5'. NU.SIG<sub>5</sub>-du MUŠ-er-kán A<sup>2</sup> [  
 6'. na-an-kán A-NA <sup>D</sup>U<sup>1</sup>URU<sup>2</sup><sup>1</sup>-aš [  
 7'. INA É.LUGAL GIŠ ŠEŠ-tar na-aš-ká[n  
 8'. TA <sup>D</sup>UTU <sup>URU</sup>TÚL-na A-NA MU.[KAM<sup>2</sup> GÍD.DA<sup>2</sup>

---

9'. NU.SIG-<sup>2</sup>du MUŠ-er-kán A-NA [  
 10'. na-aš-kán UGU DIB-an-za TI-ni [  
 11'. lu-lu-u-ti d[u-u]š-[ga-r]a-ti x [

---

12'. ]x píd-du-li SAHAR-aš INA É.LUGA[L  
 13'. ]x-a he-eš-kán-zi nu l[i-...

---

iii

x+1. ] x [

---

2'. <sup>D</sup>UJTU<sup>2ŠI</sup>-ma TA x [  
 3'. n]a-aš-kán UGU x [  
 4'. ]NA É.LUGAL KI<sup>2</sup>[  
 5'. T]A MU.KAM ú-it [

---

6'. ...]-ma píd-du-l[i  
 7'. [MUŠ ...]x IZI ŠUM-u-[en  
 8'. ]x-a x [

---

iv

---

x+1. A-N]A <sup>1</sup>he-<ri>-iq-qa-DINGIR<sup>LIM</sup> {MU.30} SIG<sub>5</sub> A-NA <sup>1</sup>TI.LUGAL-ma [  
 2'. A-NA] <sup>D</sup>LIŠ-<sup>D</sup>LAMMA {MU.x}.KAM SIG<sub>5</sub> A-NA GAL ME-ŠE-DI x [  
 3'. ]x GAL DUB.SAR GIŠ MU.9.KAM SIG<sub>5</sub> la-ah-la-hi-m[a  
 4'. ]x-šag-ga-pí SIG<sub>5</sub>-in

---

i

1. ] ... court [  
 2. ] à l'Importance des Gulšeš idem. Sur [  
 3. ] il est venu de la Fête du Dieu. A la Vie (et) dans ... [

---

4. ] ... déjà nombreux ... [  
 5. ] la Longue Année et il ... à la Divinité [  
 6. ] à l'Importance ... idem. De ... [

---

7. ] restent nombreux [...] ... [

8. ] s'est tenu à la Fête du Dieu et ... le [...] ... [

9. ] et il idem à la Longue Année. ... [...] il est venu [

---

10. ] est bon [...]. Nous avons appelé le M]UŠ de la tête à la Vie [

11. ] l'Importance idem [...] ... de la Parole à la Joie [

12. ] ensuite [...] ... idem. (C'est) favorable.

---

13. ] ... [...] soit [dé]favorable. Le MUŠ de la tête [

14. ] idem. Dessus ... l'Agita[ti]on

15. ] idem. Il est venu du EGIR.SUM (et) ... la *Joi*[e

---

16. ] ... à l'*Angoisse* [

17. ] ... et il ... à la Chambre du Roi [

18. ] ... [

---

19. ] il a ... défavorable [

20. ] a attrapé/s'est tenu ... [

21. ] il est venu de ... [

22. ] idem [

---

23. ] x x [

ii

x+1. ... [

2'. il est reparti [

3'. et il ... le dieu [

4'. il est venu de la Parole [

---

5'. Que ce soit défavorable. Le MUŠ ... [

6'. et au Dieu de l'Orage de la *ville* [

7'. dans le Palais le Bois (et) la Fraternité et il [

8'. de la Déesse Soleil d'Arinna à la [*Longue*] Année [

---

9'. Que ce soit défavorable. Le MUŠ ... à [

10'. et il s'est tenu en haut. ... à la Vie [

11'. au *lulut-* (et) à la Joie ... [

---

12'. ] à l'*Angoisse* de la Terre ... dans le Palais [

13'. ] on ouvre et ... [

---

iii

x+1. ] x [

---

2'. *Mon So]leil* ... de [

3'. ] et il ... en haut [  
 4'. ] dans le Palais ... [  
 5'. ] il est venu de l'Année [  


---

6'. ] ... l'*Angoisse* [  
 7'. Nous avons appelé [le MUŠ ...] au Feu [  
 8'. ] ... [  


---

iv

---

x+1. Po]ur Nerikkaili, la trentième année (est) favorable. Pour TI.LUGAL [  
 2'. Pour] <sup>D</sup>LIŠ-<sup>D</sup>LAMMA, la x<sup>ième</sup> année (est) favorable. Pour le chef des gardes du corps [  
 3'. ] chef des scribes sur (tablettes en) bois, la neuvième année (est) favorable. A l'Agitation [  
 4'. ] ... favorable.  


---

## II. Commentaires sur les oracles MUŠ

### 1. Les principes des oracles MUŠ

Comme cela a déjà été mentionné en introduction, l'interrogation oraculaire MUŠ consiste à observer les réactions du MUŠ à l'intérieur d'un bassin d'eau désigné par le terme *aldanni-*, bassin lui-même compartimenté en sections renvoyant à divers concepts. Les noms dorénavant attestés pour ces sections de l'*aldanni-* sont (dans l'ordre d'apparition dans nos textes et selon leur connotation) :

- a) sections symbolisant un concept positif : les Longues Années, *lulut-*, le Dieu Lune Favorable, les Fêtes des Dieux, la Joie, la Vie, l'Avenir, les Amis, la Fraternité.
- b) sections symbolisant un concept négatif : la Mort, la Maladie, l'Agitation, la Révolte, le Tabou, le Sang<sup>?</sup>, la Faute, la Prison, la Colère des Dieux, l'Angoisse<sup>?</sup>, le Feu.
- c) sections dont le sens symbolique est neutre ou ambigu : l'Importance, le Foyer, l'Arme, la Maison, l'Année, le Dieu de l'Orage, *palla* à la Vie, le Temple du Dieu, la Porte du Roi, EGIR.SUM, la Pointe des Dieux, GAZ.BA.A.A, AMA.UZU.SI.NUMxÚ, l'Avenir, le Serment, Hišhura, la Poutre, Déesse Soleil d'Arinna, les Esprits défunts, la Porte, la Main d'Homme, le Mont Darutena, Šaušga, le Dieu Tutélaire, la Chambre de Šarruma, AMA.UZU.Ú.BAR, Gulšeš, le Grand Dieu, l'Autre, le Palais, le Dieu des Chevaux, Hepat, Šarruma, la Stèle du Sang et du Serment, le Pilier, la Bouche, la Parole, la Chambre du Roi, le Bois.

Les actions réalisées par le MUŠ sont : UGU *ep-/DIB* « se tenir en haut » (à la surface de l'eau ?), *munnai-* « se cacher », GAM *uwa-* « descendre », *anda wahn-* « se tourner, se retourner » (dans le bassin), *uwa-* « venir », *pai-* « aller », KU<sub>6</sub> *ep-/IŠBAT* « attraper un poisson », *ed-* « manger » (le poisson), *arha uwa-* « sortir », *anda pai-* « aller dans, entrer », GAM : *paš-* « avaler » (un poisson), BAL-*nu-* « se rebeller » >




« s'agiter », *kar(a)p-* « s'élever<sup>7</sup> », *anda* KAR « atteindre », *EGIR-pa* ME « se reprendre », *GU-ŠU wak-* « mordre son cou » (d'un autre MUŠ ?).

Le MUŠ lui-même symbolise un concept en particulier. Ce concept peut être : « la tête (de Mon Soleil) » c'est-à-dire vraisemblablement l'ensemble de la personne du grand roi hittite, « le foyer » (peut-être le symbole de la maison en tant que cœur de celle-ci), « le nom du roi », « l'oracle », « la main de l'homme », « le dieu Soleil », « la mort », « la maladie », le « *arpa-* », « les années/l'année », « Hepat », « l'esprit défunt », pour ne citer qu'eux. Chacun de nos textes ne s'intéresse visiblement qu'à un seul et unique MUŠ dont les différents comportements sont minutieusement retranscrits. KUB 49.1 représente une exception puisque plusieurs MUŠ sont cités les uns après les autres. Cette tablette ne donne manifestement pas le détail de toutes les observations faites sur le comportement de ces MUŠ. Il pourrait par conséquent s'agir d'un document récapitulant brièvement le résultat de plusieurs interrogations divinatoires, interrogations qui pourraient avoir été l'objet de textes séparés, bien que cela ne soit pas indispensable.

Toutes ces caractéristiques, à savoir l'utilisation d'un espace compartimenté dont chaque section prend un sens symbolique déterminé au préalable d'une part, et le fait que l'objet divinatoire (en l'occurrence le MUŠ) symbolise lui-même un concept particulier, d'autre part, fait inmanquablement penser à la technique, elle aussi spécifiquement anatolienne, des oracles KIN<sup>47</sup>. Cette autre technique consiste en effet à manipuler d'une façon qu'il reste encore à déterminer des objets appelés KIN et qui sont « pris » par des agents symbolisant eux-mêmes des concepts précis puis « placés » dans des compartiments du même type que ceux des oracles MUŠ<sup>48</sup>. Le fait que ces deux techniques soient du ressort de la praticienne appelée « la Vieille Femme » (et dont il sera question ci-après) n'est d'ailleurs certainement pas l'effet du hasard.

## 2. MUŠ = serpent

Le fait que l'idéogramme sumérien MUŠ signifie primitivement « serpent » ne fait aucun doute : outre la forme archaïque du signe, à savoir →  qui fait inmanquablement penser au serpent, les nombreuses attestations de ce terme et de son équivalent akkadien *šērum* (ou *šerrum*) ne laissent pas l'ombre d'une ambiguïté sur sa traduction. Je ne citerai que quelques exemples, en guise d'illustration<sup>49</sup>. Dans un passage d'une inscription du roi néo-assyrien Asarhaddon, le MUŠ est cité aux côtés du scorpion (*zuqaqīpum*) en tant que créature d'une région de « terre de sable » (*qaqqar bāsi*) c'est-à-dire de désert de sable. Plusieurs textes médicaux font en outre allusion au fait que le MUŠ peut mordre un homme et lui instiller ainsi du poison. Il semble donc que, dans les textes mésopotamiens, le sens de l'idéogramme MUŠ soit bel et bien « serpent » sans qu'aucune ambiguïté ne soit permise. Il faut remarquer l'existence d'une section du célèbre traité divinatoire *šumma ālu* entièrement dévolue aux prédictions découlant de

<sup>47</sup> Cette remarque rejoint celle exprimée par Archi 1991, 89 qui, après avoir décrit les oracles KIN, indique : « Nicht unähnlich ist die Technik der Lekanomantie. In einem Becken befinden sich die bereits bei den Losorakeln behandelten Symbole. Die Antwort ergab sich aus den Bewegungen, die eine Wasserschlange in Beziehung auf diese Symbole ausführte. »

<sup>48</sup> Voir le plus récemment Orlamünde 2001 qui donne la bibliographie antérieure sur les oracles KIN.

<sup>49</sup> Le lecteur retrouvera les références de l'ensemble des passages cités dans CAD S, 148-150 et par Heimpel 1968, 464-512.

l'apparition d'un serpent dans l'enceinte d'une maison<sup>50</sup>. Cette section est d'ailleurs appelée, probablement dès son existence, la « tablette du serpent » (*tuppi ša muš*). Ce type d'observations divinatoires ne peut cependant pas être rapproché de nos oracles MUŠ hittites, car il s'agit, dans le cas de ce texte mésopotamien, de l'apparition d'un présage face auquel l'homme est un simple spectateur. Les témoignages hittites relèvent quant à eux bel et bien de l'interrogation oraculaire, où l'homme manipule volontairement le MUŠ pour en tirer un signe divin.

Lorsque l'on se penche sur les autres attestations du sumérogramme MUŠ dans les textes hittites<sup>51</sup>, il en ressort que le sumérogramme MUŠ est le plus souvent employé pour son sens originel de « serpent ».

### 3. Le poisson serpentiforme classé dans la catégorie MUŠ « serpent »

Il y a plusieurs raisons de prendre l'anguille ou sa cousine la murène pour une sorte de serpent. Tout d'abord, sa forme longiligne la rapproche visuellement du serpent. Cette impression est renforcée par la peau visqueuse de ce poisson, qui la fait ressembler en tous points à un reptile. Dans la documentation mésopotamienne, le terme akkadien *kuppum*, d'ailleurs relativement peu attesté, a été interprété comme désignant un poisson de type anguille<sup>52</sup> car son équivalent sumérien gú.bí comporte le terme gú « cou ». Le poisson est donc de forme longiligne, comme s'il avait un cou interminable. Or, ce poisson *kuppum*, peut-être l'anguille ou la murène, est affublé tantôt du déterminatif ku<sub>6</sub> « poisson », tantôt de celui de muš « serpent ». Les poissons serpentiformes sont donc bien considérés par les Mésopotamiens eux-mêmes comme une espèce intermédiaire entre le poisson et le serpent.

Quant au MUŠ présent dans nos textes oraculaires hittites, plusieurs de ses caractéristiques doivent être prises en considération ici. Tout d'abord, ce MUŠ évolue dans un lieu appelé *aldanni*-. Ce terme hittite désigne manifestement un point d'eau, puisqu'il est parfois précédé du déterminatif TÚL « point d'eau, source, puits » et est fréquemment associé aux noms « fleuve », « source », etc<sup>53</sup>. Il s'agit vraisemblablement d'un bassin, bien qu'il soit délicat de déterminer s'il est artificiel ou non. Il faut donc que le MUŠ hittite soit un animal aquatique. L'anguille vit le plus clair de son temps soit dans les cours d'eau soit dans les points d'eau à fond vaseux et à eaux lentes soit encore dans les eaux à remous. Si l'*aldanni*- est bien un bassin (artificiel ou non), l'anguille pourrait y séjourner tout à son aise, bien que temporairement, et ce même sans que l'homme l'y oblige. En second lieu, nos textes indiquent que le MUŠ peut attraper et manger un poisson. Or l'anguille est elle-même mangeuse de poissons. Enfin, nos textes indiquent que le MUŠ que l'on décrit se cache dans des recoins du bassin puis apparaît brutalement pour se réfugier dans une nouvelle cachette (« il est venu de ... et il est allé à ... », « il s'est caché ... »), sans doute à la suite d'une intervention humaine visant à étudier sa réaction. L'anguille est un poisson connu pour sa timidité : elle aime rester cachée dans

<sup>50</sup> CAD S, 149.

<sup>51</sup> Ertem 1965, 135-137.

<sup>52</sup> CAD K, 551-552.

<sup>53</sup> HED I, 41-43.

des aspérités du point d'eau dans lequel elle se trouve et évite habituellement la lumière. Cependant, c'est un animal vorace qui oublie toute prudence à la vue d'une proie. Il est donc aisé de la manipuler. Je pense par conséquent que c'est de cette façon que les devins « appellent » le MUŠ : ils doivent remuer devant lui un appât (un petit poisson) qui fait réagir l'animal. Celui-ci se précipite alors le plus souvent à la surface de l'eau (« il s'est tenu en haut ») puis, après avoir réussi ou non à s'emparer de l'appât, se réfugie prestement dans une nouvelle cachette. L'opération est renouvelée autant de fois que les devins le jugent nécessaire, et l'anguille – s'il s'agit bien d'elle – est délogée de sa cachette toujours de la même façon.

Comme le remarquait déjà E. Laroche<sup>54</sup>, le terme latin *anguilla*, dont provient le français, montre lui aussi le lien qui est fait entre cette espèce de poissons et le serpent. Nous pourrions en outre mentionner le fait que l'expression française « serpent d'eau » est souvent utilisée pour désigner le poisson anguiforme<sup>55</sup>. La langue française actuelle a donc conservé l'ambiguïté entre poisson et serpent pour l'anguille et les espèces qui lui sont apparentées (murène et congre principalement). Cette ambiguïté est encore renforcée par le fait que l'anguille peut de temps à autre se déplacer hors de l'eau, en particulier par temps humide ou la nuit. Elle a donc un caractère quasi amphibien qui la rapproche encore davantage du serpent.

#### 4. Provenance culturelle des oracles MUŠ

Plusieurs indices<sup>56</sup> m'incitent à penser que la technique divinatoire MUŠ est originaire du Kizzuwatna, c'est-à-dire de la zone méridionale de l'Anatolie (l'équivalent de la Cilicie classique). Tout d'abord, la présence d'un clou de glose devant certains termes tels que *lulut(i)* indique la présence de la langue louvite dans nos textes, langue parlée au Kizzuwatna ainsi que dans toute l'Anatolie occidentale. Outre cela, le lieu principal dans lequel le MUŠ évolue est désigné par un terme, à savoir *aldanni*- « bassin » qui pourrait être originaire du Kizzuwatna. C'est du moins ce que suggère J. Puhvel qui remarque que ce terme est en relation étroite avec le culte des cours d'eau de cette région de l'Anatolie<sup>57</sup>.

<sup>54</sup> Laroche 1958, 159 : « En latin, *anguilla* dérive d'*anguis*, et le mot *natrix* signifie à la fois 'serpent nageur' et 'peau d'anguille'. »

<sup>55</sup> Le Nouveau Petit Robert (1993), 2079.

<sup>56</sup> Après réflexion, il m'apparaît que l'origine géographique supposée des divinités mentionnées dans ces comptes rendus oraculaires ne peut pas être prise en compte ici. Il est en effet possible que nos textes fassent allusion à des divinités venant d'horizon très divers, mais cela ne peut alors refléter que leur implication dans l'affaire examinée par l'interrogation oraculaire. La même remarque pourrait être formulée au sujet des toponymes mentionnés dans nos textes : la mention de l'une ou de l'autre de ces villes anatoliennes ne peut pas être mise en relation avec le lieu d'origine de l'oracle MUŠ mais seulement avec le problème soulevé par cet oracle. Cela explique la présence, dans nos comptes rendus d'oracles MUŠ, de noms de villes qui sont très éloignées les unes des autres. C'est le cas de Zippalanda au Nord-Est de Hattuša (RGTC 6, 505-509 et Popko 1994, 11-13) et de Kummanni, capitale du Kizzuwatna (RGTC 6, 221 et RGTC 6/2, 83-84) par exemple. Ainsi, seul le critère linguistique semble être un élément fiable pour établir la provenance culturelle des oracles MUŠ.

<sup>57</sup> HED I, 42-43 : « Unlike *wattaru*-, *altanni*- is not attested in OHitt. and seems to be an imperial import from Cilicia and Kizzuwatna ; it designates also artificial cultic waterworks such as the ophio- or ichthymoantic tanks used for MUŠ ('snake', i. e. probably eel) divination. Being tied to spring- and river-worship of Luwo-Hurrian provenance, *altanni*- is probably of such origin. »

Par ailleurs, CTH 575.1 mentionne la Vieille Femme (<sup>MUNUS</sup>ŠU.GI), praticienne que l'on connaît par de nombreux textes hittites et qui se charge aussi bien de vaticiner par le biais des sorts KIN et que d'exorciser un patient. Dans ce dernier contexte, la Vieille Femme intervient surtout dans le cadre de rituels magiques provenant du Kizzuwatna.

Enfin, l'anguille effectue bien sa croissance en eau douce, mais elle a besoin d'un accès à la mer pour pouvoir se reproduire<sup>58</sup>. Elle a été repérée dans l'Atlantique, la Mer du Nord, la Manche et la Méditerranée<sup>59</sup>. Elle ne peut donc être présente que dans une région de la côte méditerranéenne de l'Anatolie antique<sup>60</sup>, ce qui correspond notamment au Kizzuwatna. L'anguille pouvait également se trouver dans les autres provinces de l'Anatolie occidentale, telles que la Lycie<sup>61</sup>.

Tout m'incite donc à penser que l'ichthyomancie par les anguilles était une tradition du Kizzuwatna, tradition qui a par la suite pu être transmise à ses voisins de la côte occidentale de l'Anatolie. Il faut par ailleurs souligner le lien culturel fort qui existe dès l'époque hittite entre le Kizzuwatna et la Syrie du Nord. On a plus particulièrement parlé d'influences syriennes sur la religion kizzuwatnienne<sup>62</sup>. Mais l'échange des idées et des personnes se fait généralement dans les deux sens, et il ne me paraît pas impossible de penser que le Kizzuwatna a, lui aussi, influencé d'une certaine manière la culture de Syrie septentrionale. Cette suggestion n'a pas encore fait l'objet d'une étude détaillée pour l'époque hittite. Les données archéologiques et épigraphiques du début du premier millénaire illustrent en revanche clairement l'existence d'une seule et unique communauté culturelle rassemblant à cette époque Anatolie méridionale et Syrie du Nord<sup>63</sup>.

On peut par conséquent se demander si la pratique oraculaire des MUŠ existait également dans le monde nord-syrien voire en Mésopotamie. Les textes de ces deux grandes régions ne font, à ma connaissance, aucune allusion à cette technique divinatoire<sup>64</sup>. Il y a bien dans quelques recueils mésopotamiens de présages, des mentions de poissons à la forme plus ou moins insolite apparaissant comme autant de messages divins spontanés<sup>65</sup>, mais cela est bien éloigné des oracles MUŠ de l'Anatolie hittite. Il faut donc se résoudre, du moins pour le moment, à considérer la technique de l'oracle MUŠ comme une originalité anatolienne.

<sup>58</sup> Toutes les espèces d'anguilles, qu'elles vivent près des côtes atlantiques, méditerranéennes ou autres, partent se reproduire dans la mer des Sargasses en Atlantique.

<sup>59</sup> Les informations sur l'anguille qui ne sont pas issues du Nouveau Petit Robert ont été trouvées sur le site internet « Pecheaquariophilie » : <http://www.pecheaquariophilie.com/>

<sup>60</sup> La présence de l'anguille sur la côte méditerranéenne de la Turquie est attestée encore de nos jours. Voir notamment un document sur la pêche et l'élevage d'anguilles en Europe et en Turquie émanant de la Commission de la pêche du Parlement Européen et daté de 2004 ([http://www.europarl.eu.int/meetdocs/2004\\_2009/](http://www.europarl.eu.int/meetdocs/2004_2009/)).

<sup>61</sup> Quant à la murène, elle a elle aussi besoin d'eau de mer et vit dans un climat tempéré voire chaud : Le Nouveau Petit Robert (1993), 1458. D. Lefèvre et moi-même sommes d'accord pour dire que les caractéristiques du MUŠ de nos textes oraculaires hittites correspondent plus à celles de l'anguille qu'à celles de la murène.

<sup>62</sup> Hutter apud Melchert (éd.) 2003, 214-215.

<sup>63</sup> Hutter apud Melchert (éd.) 2003, 275-277. Plusieurs ouvrages collectifs récents ont abordé ce thème. Novák/Prayon/Wittke (éd.) 2004 en est un exemple.

<sup>64</sup> CAD N<sub>2</sub>, 336-341 et RIA 3, 66-72.

<sup>65</sup> Ebeling 1928, 26-27 ; Oppenheim 1974, 199-203.

DEUXIEME PARTIE : LES ATTESTATIONS LITTERAIRES ET ARCHEOLOGIQUES CONCERNANT  
L'ICHTHYOMANCIE DANS L'ANATOLIE SUD-OCCIDENTALE A L'EPOQUE GRECO-ROMAINE

L'analyse de l'ichthyomancie dans l'Anatolie sud-occidentale ne peut que commencer par les sources littéraires<sup>66</sup>. En effet, les quelques textes que nous avons rassemblés sont les témoignages les plus significatifs sur ce thème, tandis que les données archéologiques restent, pour le moment, rares et insuffisantes à éclairer le problème.

Les textes, dont la chronologie court du I<sup>er</sup> au VI<sup>e</sup> s. ap. J.-C. à l'exception du passage d'Athénée<sup>67</sup>, seront présentés selon les localités mentionnées, toutes explicitement lyciennes (Dinos, Soura, Myra, Limyra), et par ordre chronologique. Puis seront abordés les problèmes d'interprétation de cette documentation.

(1) Athén., *Deip.* VIII 333 d-f<sup>68</sup> : « Je ne passerai pas non plus sous silence les devins qui prophétisent d'après les poissons en Lycie, à propos desquels Polycharme dans le deuxième livre de *Lykiaka* raconte ceci : “ Quand on passe en allant vers la mer là où se trouve le bois sacré d'Apollon, près du rivage, dans lequel il y a le tourbillon (*dina*) sur le sable, ceux qui consultent l'oracle se présentent en ayant deux petites broches en bois avec dix morceaux de viande grillée sur chacune. Et le prêtre reste assis près du bois sacré en silence, celui qui consulte l'oracle jette les brochettes dans le tourbillon et observe ce qui se passe. Après qu'on les a jetées, le tourbillon se remplit d'eau de mer et arrive une multitude de poissons si grande et telle qu'on est frappé de stupeur par ce phénomène jamais vu, et on prend garde à cause des dimensions de ces créatures. Lorsque l'interprète révèle les espèces des poissons, alors celui qui a interrogé l'oracle reçoit la réponse du prêtre à la question qu'il avait posée. Apparaissent des *orphoi*<sup>69</sup>, des *glaukoi*<sup>70</sup>, parfois des baleines ou des *pristeis*<sup>71</sup>, ainsi que beaucoup de poissons jamais vus et étranges à voir ”.

<sup>66</sup> Cette pratique n'est apparemment attestée sur le pourtour égéen qu'en Lycie : cf. Bouché-Leclercq 1879, p. 152 ; Farnell 1907, p. 230.

<sup>67</sup> Dans le passage en question, Athénée utilise l'œuvre de Polycharme (*Lykiaka*) et celle d'Artémidore (*Geographoumena*), auteurs d'époque hellénistique, le premier actif dans le courant du II<sup>e</sup> s. av. J.-C. (FGrHist 770 F 1/2) et le second vers le début du I<sup>er</sup> s. av. J.-C. (*RE*, s.v. *Artemidoros* [27 – Berger], col. 1329-1330).

<sup>68</sup> « Οὐ κατασιωπήσομαι δὲ οὐδὲ τοὺς ἐν Λυκίᾳ ἰχθυομάντεις ἄνδρας, περὶ ὧν ἱστορεῖ Πολύχαρμος ἐν δευτέρῳ Λυκιακῶν γράφων οὕτως· ὅταν γὰρ διέλθῃσι πρὸς τὴν θάλασσαν, οὗ τὸ ἄλσος ἐστὶ πρὸς τῇ αἰγιαλῷ τοῦ Ἀπόλλωνος, ἐν ᾧ ἐστὶν ἡ δίνα ἐπὶ τῆς ἀμάθου, παραγίνονται ἔχοντες οἱ μαντευόμενοι ὀβελίσκους δύο ξυλίνους, ἔχοντας ἑφ' ἑκατέρῳ σάρκας ὁπτὰς ἀριθμῷ δέκα. καὶ ὁ μὲν ἱερεὺς κάθεται πρὸς τῷ ἄλσει σιωπῇ, ὁ δὲ μαντευόμενος ἐμβάλλει τοὺς ὀβελίσκους εἰς τὴν δίναν καὶ ἀποθεωρεῖ τὸ γινόμενον. μετὰ δὲ τὴν ἐμβολὴν τῶν ὀβελίσκων πληροῦται θαλάσσης ἡ δίνα καὶ παραγίνεται ἰχθύων πλήθος τοσοῦτον καὶ τοιοῦτον ὥστ' ἐκπλήττεσθαι τὸ ἄορατον τοῦ πράγματος, τῷ δὲ μεγέθει τοιούτων ὥστε καὶ εὐλαβηθῆναι. ὅταν δὲ ἀπαγγεῖλῃ τὰ εἶδη τῶν ἰχθύων ὁ προφήτης, οὕτως τὸν χρησμὸν λαμβάνει παρὰ τοῦ ἱερέως ὁ μαντευόμενος περὶ ὧν ἠΐστατο. φαίνονται δὲ ὄρφοι, γλαυκοί, ἐνίοτε δὲ φάλλαινοι ἢ πρίστεις, πολλοὶ δὲ καὶ ἄορατοι ἰχθύς καὶ ξένοι τῇ ὄψει. Ἀρτεμίδωρος δ' ἐν τῷ δεκάτῳ τῶν Γεωγραφουμένων λέγεσθαί φησιν ὑπὸ τῶν ἐπιχωρίων πηγῇ ἀναδίδεσθαι γλυκεὸς ὕδατος, ὅθεν συμβαίνειν δίνας γίνεσθαι καὶ ἰχθύας ἐν τῷ δινάζοντι τόπῳ μεγάλους. τοῦτοις δὲ οἱ θυσιάζοντες ἐμβάλλουσιν ἀπαρχὰς τῶν θυσιαζομένων ἐπὶ ξυλίνων ὀβελίσκων ἀναπείροντες κρέα ἐφθὰ καὶ ὁπτὰ καὶ μάζας καὶ ἄρτους, ὀνομάζεται δὲ ὁ λιμὴν καὶ ὁ τόπος οὗτος Δίνος ».

<sup>69</sup> *Epinephelus*, mérout. Les identifications des espèces de poissons sont celles données dans l'œuvre bien informée de Bodson 1978, p. 170, même si des incertitudes persistent. Voir aussi Chantraine 1984-1990.

<sup>70</sup> Poisson comestible de couleur grise qui n'a pas été plus précisément identifié.

<sup>71</sup> *Pristis*, poisson-scie.

Artémidore dans le dixième livre de sa *Géographie* dit que les habitants de la région racontent qu'une source d'eau douce jaillit, d'où il arrive que des tourbillons apparaissent; et qu'apparaissent des grands poissons dans le lieu agité par les tourbillons. Ceux qui offrent des sacrifices jettent aux poissons les prémices des offrandes, en enfilant sur des petites broches en bois des morceaux de viande bouillie ou rôtie, des galettes et des morceaux de pain. Ce port et ce lieu s'appellent **Dinos** ».

(2) Plut., *De soll. an.* 976 c<sup>72</sup> : « [...] en effet, j'apprends que près de **Soura**, village en Lycie entre Phellos et Myra, restant assis ils prononcent des oracles à partir des poissons, comme on fait d'après les oiseaux, avec une technique et une méthode particulières, et ils examinent les mouvements circulaires, les fuites et les poursuites des poissons ».

(3) Elien, *De nat. an.* VIII 5<sup>73</sup> : « J'ai appris aussi qu'il y a un village lycien entre Myra et Phellos, dont le nom est **Soura**, où des hommes restant assis rendent des oracles d'après les poissons et ils savent ce que signifient l'arrivée des poissons quand ils sont appelés et leur départ, ce que les poissons révèlent quand ils n'obéissent pas et ce qu'ils veulent dire quand ils viennent nombreux. Tu entendras ces prophéties des experts selon que le poisson a bondi, qu'il est remonté des profondeurs à la surface, qu'il accepte de la nourriture ou, au contraire, qu'il ne la saisit pas ».

(4) Et. Byz. s.v. *Soura*<sup>74</sup> : « **Soura**, oracle de Lycie, sur lequel Polycharme dit dans l'*Histoire de la Lycie* "Où maintenant (il y a) un bassin (*phrear*) d'eau de mer. Le lieu est appelé Sourios" ».

(5) Pline, *HN* XXXII 17<sup>75</sup> : « En effet à **Myra**, en Lycie, dans la source d'Apollon dénommé Curien, (les poissons) appelés trois fois avec la flûte viennent pour les présages; s'ils s'emparent des viandes qu'on leur jette, le présage est favorable pour ceux qui consultent l'oracle, s'ils les rejettent de la queue, le présage est défavorable ».

(6) Elien, *De nat. an.* XII 1<sup>76</sup> : « Il y a un golfe à **Myra**, en Lycie, et une source ; et il s'y trouve un temple d'Apollon et le prêtre de ce dieu distribue la viande des veaux immolés à la divinité, les poissons *orphoi*<sup>77</sup> approchent en nageant en bancs et dévorent

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« [...] ἐπεὶ καὶ περὶ Σοῦραν πυνθάνομαι, κώμην ἐν τῇ Λυκίᾳ Φέλλου μεταξὺ καὶ Μύρων, καθεζομένους ἐπ' ἰχθύσιν ὥσπερ οἰωνοῖς διαμαντεύεσθαι τέχνην τινὴ καὶ λόγῳ ἐλίξεις καὶ φυγὰς καὶ διώξεις αὐτῶν ἐπισκοποῦντας ».

<sup>73</sup> « Πέπυσμαι δὲ καὶ κώμην τινὰ Λυκιακὴν μεταξὺ Μύρων καὶ Φελλοῦ, Σοῦρα ὄνομα, ἐν ἣ μαντεύονται τινες ἐπ' ἰχθύσι καθήμενοι, καὶ ἴσασιν ὅ τι καὶ νοεῖ ἢ τε ἀφίξεις αὐτῶν κληθέντων καὶ ἡ ἀναχώρησις, καὶ ὅταν μὴ ὑπακούσωσι τί δηλοῦσι, καὶ ὅταν ἔλθωσι πολλοὶ τί σημαίνουσιν. ἀκούσει δὲ τὰ μαντικά τῶν σοφῶν ταῦτα καὶ πηρήσαντος ἰχθύος καὶ ἀναπλεύσαντος ἐκ βυθοῦ καὶ τροφὴν προσεμένου καὶ αὐτὸ πάλιν μὴ λαβόντος ».

<sup>74</sup> « Σοῦρα, μαντεῖον Λυκίας, περὶ οὗ Πολύχαρμος φησιν ἐν Λυκιακοῖς ὅπου νῦν φρέαρ θαλάσσης τόπος Σούριος καλούμενος ».

<sup>75</sup> « Nam in Lycia Myris in fonte Apollinis, quem Curium appellant, ter fistula uocati ueniunt ad augurium ; diripere eos carnes abiectas laetum est consultantibus, caudis abigere dirum ».

<sup>76</sup> « Μυρέων τῶν ἐν Λυκίᾳ κόλπος ἐστὶ, καὶ ἔχει πηγὴν, καὶ ἐνταῦθα νεῶς Ἀπόλλωνός ἐστι, καὶ ὁ τοῦδε τοῦ θεοῦ ἱερεὺς κρέα μόνωσια διασπείρει τῶν τῷ θεῷ τεθυμένων, ὁρῶν τε οἱ ἰχθύες ἀθρόοι προσνέουσι, καὶ τῶν κρεῶν ἐσθίουσιν οἷα δῆπου καλούμενοι δαιτυμόνες, καὶ χαίρουσιν οἱ θύσαντες, καὶ τὴν τούτων δαῖτα πιστεύουσιν εἶναι σφισιν ὅτταν ἀγαθὴν, καὶ λέγουσιν ἴλεων εἶναι τὸν θεόν, διότι οἱ ἰχθύες ἐνεπλήσθησαν τῶν κρεῶν. εἰ δὲ ταῖς οὐραῖς αὐτὰ ἐς τὴν γῆν ἐκβάλοιεν ὥσπερ οὖν ἀτιμάσαντες καὶ μυσαρὰ κρίναντες, τοῦτο δὴ τοῦ θεοῦ μῆνις εἶναι πεπίστευται. γνωρίζουσι δὲ καὶ τὴν τοῦ ἱερέως φωνὴν οἱ ἰχθύες, καὶ ὑπακούσαντες μὲν εὐφραίνουσι διόδους κέκληνται, τοῦναντίον δὲ δράσαντες λυποῦσιν ».

<sup>77</sup> Cf. *supra*, note 69.



les viandes comme des hôtes invités. Et ceux qui ont fait les sacrifices se réjouissent et ils croient que ce festin des poissons est un bon présage pour eux, et ils disent que le dieu est favorable parce que les poissons se sont rassasiés des viandes. Mais s'ils jettent vers la terre les viandes avec leurs queues, comme s'ils les méprisaient et les considéraient comme impures, cela est interprété comme du ressentiment de la part du dieu. Les poissons connaissent la voix du prêtre et quand ils ont obéi, ils réjouissent ceux pour lesquels ils ont été appelés, alors qu'en faisant le contraire ils les affligent ».

(7) Pline, *HN* XXXI 22<sup>78</sup> : « De même, **la source du fleuve Limyra** se déplace d'habitude dans les endroits avoisinants, apportant des prédictions et, chose merveilleuse, elle se déplace avec les poissons. Les habitants cherchent des réponses auprès d'eux avec de la nourriture : quand ils saisissent cette dernière, la réponse est favorable, si au contraire la réponse est défavorable, ils rejettent la nourriture de la queue ».

Le premier problème qui se pose est d'identifier le siège des oracles : avons-nous affaire à quatre lieux différents ou bien ces textes font-ils référence, du moins en partie, au même *manteion*?

Il paraît difficile d'identifier l'oracle à la source du fleuve Limyra qui est évoqué par Pline (7) avec les autres<sup>79</sup>. En effet, le savant montre qu'il connaît l'existence des deux villes de Myra et Limyra dans un autre passage de son œuvre<sup>80</sup>, où il dresse une liste d'habitats lyciens. La confusion entre les deux sites n'est donc pas vraisemblable, surtout si l'on considère que l'oracle en question était installé à la source d'un fleuve et non près de la mer, comme dans les autres cas. La pratique d'attirer les poissons avec des appâts est, en effet, semblable à celle qui est décrite à propos des autres sites, mais cela n'est pas suffisant pour en déduire qu'il s'agit d'un seul et même lieu. D'ailleurs, l'existence d'un *manteion* à Limyra est aussi prouvée par les données numismatiques : des monnaies d'époque impériale portent la légende Λιμυρέων χρησμός et soulignent la notoriété de l'oracle<sup>81</sup>. Ainsi, l'emplacement topographique de ce *manteion* atteste, d'une part, l'observation de poissons d'eau douce et, d'autre part, la présence de l'ichthyomancie aussi à l'intérieur des terres et non pas seulement sur la côte lycienne.

<sup>78</sup> « Item fluvii fons Limyrae transire solet in loca vicina portendens aliquid, mirumque quod cum piscibus transit. Responsa ab his petunt incolae cibo, quem rapiunt adnuentes, si vero eventum negent, caudis abigunt ». Le texte des manuscrits est très altéré ; nous avons suivi l'édition Loeb (Jones, 1963) puisque les restitutions proposées dans l'édition Belles Lettres (Serbat, 1972) se fondent sur l'hypothèse que ce passage et celui de Pline (5) parlent du même *manteion*. Or cela n'est pas du tout assuré : cf. *infra*, p. 43 à propos de quelques monnaies d'époque impériale romaine mentionnant l'oracle de Limyra. *Fluvii* étant l'un des mots restitués, il pourrait s'agir de la « source de Limyra » et non pas de la « source du fleuve Limyra ».

<sup>79</sup> Parke 1985, p. 258 note 50 se demande si Pline n'a pas confondu Myra et Limyra, vraisemblablement à cause de la ressemblance du nom. La même hypothèse est prudemment avancée aussi par Graf 1993, p. 25 note 20. Bouché-Leclercq 1879, p. 152 et Farnell 1907, p. 230 avaient, par contre, distingué les lieux comme, plus récemment, Bean 1978, p. 143 ; Bryce 1986, p. 197 ; Lebrun 1990, p. 190.

<sup>80</sup> V 100.

<sup>81</sup> Von Aulock 1974, n. 109-113.

Plus complexe est le problème posé par les oracles localisés à Dinos, à Soura et à Myra. En effet, on peut se demander si Pline (5) et Elieen (6)<sup>82</sup>, qui situent le *manteion* à Myra, ne se réfèrent pas en réalité à celui de Soura, village côtier à seulement quelques kilomètres de distance<sup>83</sup>. En faveur de cette hypothèse joue l'affirmation d'Elieen que l'oracle des poissons se trouve à Myra sur un golfe, où sont localisés aussi une source et un temple d'Apollon. Or, cette ville au jour d'aujourd'hui n'est pas située sur la côte, mais quelques kilomètres à l'intérieur des terres, même si dans l'Antiquité cette distance devait être plus réduite<sup>84</sup>. Il semblerait donc que, dans ce passage, « à Myra » signifie « dans la région de Myra » et cela amène à privilégier l'idée de l'existence dans la zone d'un seul oracle aux poissons, celui de Soura, identifié par les fouilles archéologiques, comme on le verra<sup>85</sup>.

Cette hypothèse est corroborée par le texte de Pline (5), selon lequel les poissons oraculaires sont installés à Myra, dans la source d'Apollon Curien, épiclese obscure qui doit vraisemblablement être corrigée en Surien<sup>86</sup>. Les caractéristiques des consultations sont effectivement semblables à celles de l'oracle décrit par Plutarque (2) et par Elieen (3).

Il paraît donc plausible que les cinq sources concernant Myra et Soura, étroitement liées d'un point de vue philologique, ne parlent en réalité que d'un seul *manteion* : le lieu sacré situé près d'un golfe comprenait un temple d'Apollon, une source (sous-marine ?<sup>87</sup>) ainsi qu'un bassin d'eau de mer, selon Etienne de Byzance (4)<sup>88</sup>. Les devins y observaient le comportement des poissons et notamment leur voracité vis-à-vis de la nourriture jetée dans l'eau en guise d'appât. Il s'agissait de poissons habitués à la présence humaine puisque les sources précisent qu'ils étaient nourris avec les prémices des offrandes aux divinités, qu'ils connaissaient la voix du prêtre et qu'ils étaient capables d'obéir à ses appels. Toutefois la mention de la part d'Elieen (6) de mérours (*orphoi*), poissons peu compatibles avec la vie en captivité<sup>89</sup>, nous amène à penser qu'ici aussi l'observation des animaux marins sauvages était peut-être pratiquée.

Il est plus difficile de déterminer si le passage d'Athénée (1) fait aussi référence au *manteion* de Soura. Ce texte est le plus long et le plus intéressant sur l'ichthyomancie

<sup>82</sup> Elieen (6) semble, du moins en partie, reprendre les informations données par Pline (5) : cf. le nom du site, le dieu qui patronne l'oracle, la présence d'une source et surtout la description, attestée seulement dans ces deux textes, des poissons qui rejettent avec leur queue les viandes quand le présage est défavorable. Le même détail est attribué aussi par Pline (7) aux poissons de la source du fleuve Limyra (contamination ?)

<sup>83</sup> Cf. Plut. (2) ; Elieen (3) ; Et. Byz. (4).

<sup>84</sup> A propos de l'étude paléo-environnementale de la côte entre Andriake et Alanya, cf. Fouache *et alii* 2005.

<sup>85</sup> Cette identification implique qu'Elieen ait parlé deux fois de l'oracle de Soura en précisant, dans un cas, la localisation dans ce site (3) et en mentionnant simplement, dans l'autre, la région de Myra (6). En effet, pour le reste, les caractéristiques des deux *manteia* sont *grosso modo* les mêmes. Il semblerait qu'Elieen dans le passage (6) mélange les informations déjà données dans le livre VIII (et qui paraissent venir de Plut. [2]) et celles qui ont été données par Pline (5 – voir *supra*, note 75).

<sup>86</sup> Entre autres, *RE s.v. Apollon* (Wernicke), col. 57 ; *FGrHist* 770 T 2c ; Bean 1978, p. 131. A propos des inscriptions qui mentionnent cette divinité, cf. *infra*, p. 45.

<sup>87</sup> Sur le piémont du Taurus et dans la zone en question les résurgences karstiques sous-marines ou littorales sont nombreuses encore aujourd'hui et de débit variable.

<sup>88</sup> Etienne cite l'œuvre de Polycharme, comme Athénée (1), mais apparemment il ne s'agit pas du même passage puisque les informations et les noms des sites diffèrent.

<sup>89</sup> Cf. Göthel 1996, p. 245-246.



en Lycie ; l'auteur utilise, en outre, des sources d'époque hellénistique (Polycharme et Artémidore) qui donnent une profondeur historique à notre problématique.

Les indications topographiques sont précises : on rejoint l'oracle en traversant un bois consacré à Apollon (*alsos*)<sup>90</sup> qui s'étend près du rivage de la mer, dans un port (*limèn*) appelé Dinos. Un phénomène naturel (la formation de tourbillons d'eau – en grec *dina* – dus probablement à des résurgences karstiques près du littoral<sup>91</sup>) attire des poissons de mer, parfois de très grande taille (baleines, poissons-scies). Les devins n'observent pas le comportement des animaux, qu'ils nourrissent cependant avec des brochettes de viande et d'autres aliments ; ils s'intéressent surtout aux différentes espèces qui s'approchent et constituent autant de présages. Il n'y a aucune mention des sites de Myra et de Soura.

H.W. Parke<sup>92</sup> a avancé l'hypothèse que les différences entre les textes concernant Soura/Myra et celui d'Athénée soient dues à l'évolution de la pratique divinatoire dans le même *manteion* au fil des siècles. Cette supposition est toutefois contredite par les sources mêmes : Polycharme, dont l'œuvre est mentionnée aussi par Etienne de Byzance, atteste qu'à Soura/Myra il y avait une sorte de bassin d'eau de mer. Si les oracles de Dinos et de Soura sont un seul et même *manteion*, il faudrait alors admettre que, à l'endroit où les devins observaient les poissons de mer sauvages, attirés par le tourbillon et les appâts, existait déjà à l'époque de Polycharme (4) un bassin vraisemblablement utilisé à des fins oraculaires. Cette hypothèse implique aussi que Polycharme ait appelé de deux façons différentes le même lieu (Dinos chez Athénée – 1, Soura chez Etienne de Byzance – 4) où, depuis l'époque hellénistique, deux formes d'ichthyomancie se côtoyaient.

D'autre part, on peut aussi bien imaginer que Polycharme ait parlé dans son œuvre de deux oracles distincts fondés sur l'ichthyomancie, l'un situé à Soura et l'autre dans une localité encore non identifiée, caractérisée par un phénomène naturel tellement frappant qu'il lui donna son nom (Dinos = tourbillon). Cela est tout à fait plausible, vu que la Lycie accueillait encore un autre *manteion* aux poissons, à la source du fleuve Limyra.

G. Bean<sup>93</sup> a cru trouver une réponse à ces interrogations dans les découvertes archéologiques effectuées dans le sanctuaire d'Apollon Sourien repéré sur la côte lycienne, quelques kilomètres à l'ouest de Myra<sup>94</sup>. Une acropole fortifiée, occupée par des tombes à sarcophage et d'autres creusées dans le rocher, surplombe une petite vallée ouverte sur une baie. Un temple consacré à Apollon, vraisemblablement daté de la fin de la période hellénistique, a été découvert dans ce vallon, aujourd'hui en partie occupé par un marais. Il s'agit d'un *naos* à plan rectangulaire, avec deux colonnes *in antis*, d'ordre dorique ; les murs de la *cella* ainsi que les éléments architecturaux décorés sont assez bien conservés<sup>95</sup>. Aucune trace, par contre, de l'endroit où les consultations avaient lieu ; les

<sup>90</sup> Sur les bois sacrés dédiés à Apollon en Asie Mineure, cf. Graf 1993.

<sup>91</sup> Les grandes résurgences karstiques sont relativement stables à l'échelle des derniers milliers d'années. A propos de la relation privilégiée entre ce type de résurgences et les entrées des Enfers dans le monde grec, cf. Fouache et Quantin 1998.

<sup>92</sup> Parke 1985, p. 197.

<sup>93</sup> Bean 1978, p. 130-132.

<sup>94</sup> L'identification est assurée par les inscriptions d'époque romaine qui contiennent l'épiclese du dieu : Petersen et Luschan 1889, p. 45-46 ; *CIG* III, 4303 i-k.

<sup>95</sup> Description du site dans Borchhardt 1975, p. 76-80.

inscriptions sur les parois internes du *naiskos* sont surtout des dédicaces au dieu local Sozon, représenté comme un cavalier casqué au javelot, et dans un cas au dieu rhodien Zeus Atabyrios. L'emplacement topographique rappelle la description du site de Soura/Myra fournie par les sources littéraires, notamment par Elieen (6 – cf. le golfe, la source, le temple). G. Bean souligne la présence sur le site de plusieurs sources (dont l'une très abondante au pied de l'acropole) et les met en relation avec le phénomène des tourbillons d'eau décrits par Athénée à propos du site de Dinos. Mais, nous l'avons dit, ce phénomène semble plutôt lié à des résurgences karstiques sous-marines ou littorales, surtout dans le cas présenté par Athénée (cf. les baleines et les poissons-scies). G. Bean<sup>96</sup>, conscient de cette difficulté, met d'ailleurs en doute l'information donnée par Polycharme sur ces gros poissons sauvages.

Pour ma part, je considère que ces quelques données archéologiques restent trop succinctes pour permettre d'éclaircir le problème de l'identification du site de Soura avec celui de Dinos. Des analyses paléo-environnementales du site seraient d'une importance fondamentale pour tâcher de résoudre la question. En tenant compte de l'abondance des résurgences karstiques le long de la côte, il n'est pas impossible que deux *manteia* différents (Dinos, Soura/Myra) aient été caractérisés par des sources sous-marines, celle de Dinos étant la plus spectaculaire.

Un autre aspect intéressant de ces découvertes archéologiques est celui de la persistance sur le site de Soura d'anciens cultes anatoliens attestés par les dédicaces au dieu Sozon ; elles ne font que confirmer le profond attachement des Lyciens à leurs anciennes traditions, précieusement conservées jusqu'à l'époque romaine<sup>97</sup>.

Ajoutons enfin quelques mots sur les particularités de cette technique mantique employée en Lycie. Penchons-nous tout d'abord sur la question des espèces de poissons. Dans le cas de l'oracle de Dinos, plusieurs sont mentionnées (*orphoi*, *glaukoi*, baleines, *pristeis*), toutes vivant apparemment dans la mer<sup>98</sup>. La description indique clairement que les animaux sont sauvages, de grande taille et que les espèces qui s'approchent peuvent varier selon les occasions ; de ces apparitions le devin tire les présages.

Dans les sources concernant le *manteion* de Soura/Myra, l'espèce des poissons n'est précisée que par Elieen (6) qui parle, encore une fois, d'*orphoi* (mérous), animaux peu adaptés à la vie en captivité. On aurait donc à Soura aussi un oracle fondé, du moins en partie, sur l'observation des poissons sauvages, comme à Dinos. Mais, dès l'époque de Polycharme (chez Etienne de Byzance [4]), le sanctuaire était doté aussi d'un bassin d'eau de mer utilisé pour les consultations. Dans les deux cas, les espèces ne sont pas nombreuses et la technique oraculaire concerne donc leur comportement vis-à-vis d'appâts jetés dans l'eau. Pour le site à la source du fleuve Limyra, Pline décrit des consultations tout à fait semblables, même si les poissons, peut-être sauvages, semblent

<sup>96</sup> Bean 1978, p. 132.

<sup>97</sup> Cf. Lebrun 1990, p. 190-194.

<sup>98</sup> Laumonier 1958, p. 97 note 1 parle d'un oracle aux poissons de mer.

changer d'emplacement chaque fois que la source se déplace. Ces derniers cas sont donc les plus proches de l'ichthyomancie hittite.

Les *orphoi* semblent jouer un rôle important dans la mantique lycienne ; cette prédilection est peut-être liée au caractère craintif des poissons qui seraient particulièrement adaptés à un oracle fondé sur les réactions imprévisibles de ces animaux attirés par des offrandes. Aucune mention, par contre, d'anguilles pourtant si fréquentes, encore aujourd'hui, dans les zones marécageuses de la côte lycienne et probablement décrites dans les textes hittites.

On remarque enfin que seulement trois textes évoquent une divinité : il s'agit toujours d'Apollon, le dieu de la mantique par excellence, notamment dans les régions égéennes d'Anatolie<sup>99</sup>. Les aménagements diffèrent selon les sites : un bois sacré à Dinos, une source et un temple à Soura/Myra. Dans le premier cas, l'oracle était installé en milieu naturel, apparemment sans aucune structure architecturale, l'endroit étant probablement choisi à cause d'un phénomène naturel spectaculaire qui servit de catalyseur pour les consultations oraculaires. A noter que le *manteion* à la source du fleuve Limyra est lié à un autre *miraculum*, c'est-à-dire probablement un phénomène karstique d'assèchement et de résurgence d'une source à des endroits différents<sup>100</sup>. A Soura/Myra, par contre, un véritable sanctuaire fut aménagé, comme les découvertes archéologiques l'ont confirmé. Reste à expliquer la relation entre la source dont parlent Pline (5) et Elie (6), qui pourrait être sous-marine, et le bassin d'eau de mer mentionné par Polycharme (chez Etienne de Byzance [4]) : pourrait-on imaginer deux lieux d'observation des poissons utilisés à tour de rôle au fil des saisons ? En effet, s'il s'agit bien d'une source sous-marine, on sait que les résurgences karstiques ont une alimentation constante mais avec un cycle saisonnier de haut débit au printemps et d'étiage en hiver. Ce régime aurait-il eu comme conséquence la nécessité d'installer un bassin pour assurer une pratique mantique tout le long de l'année ?

## CONCLUSION

Une lecture attentive des sources textuelles permet de déceler des ressemblances significatives entre l'ichthyomancie attestée à l'âge du bronze et celle de l'époque gréco-romaine en Anatolie. Tout d'abord, il faut souligner la rareté de cette pratique autant dans les textes hittites (où bien d'autres techniques oraculaires sont privilégiées) que dans les témoignages littéraires postérieurs. Dans le monde égéen on ne connaît, jusqu'à présent, que les cas d'ichthyomancie attestés en Lycie ; cela paraît d'autant plus intéressant que ce type de mantique pourrait être originaire du Kizzuwatna, la région de l'Anatolie correspondant à la Cilicie classique, donc proche de la Lycie.

Exception faite de l'oracle de Dinos, dont les spécificités ont été rappelées, les techniques de consultation ichthyomantique hittite, d'une part, et lycienne, d'autre part,

<sup>99</sup> Il suffira de citer les oracles du dieu à Didymes (Milet), Claros, Kyaneai (Paus. VII 21, 13). A Soura, il côtoie le dieu local Sozon, encore mentionné dans les inscriptions d'époque romaine.

<sup>100</sup> Cf. Bean 1978, p. 143.

apparaissent tout à fait analogues : dans un bassin ou plan d'eau (nommé *aldanni*- en hittite)<sup>101</sup> des poissons sont « appelés », c'est-à-dire appâtés. Le devin observe leurs comportements et en tire des présages favorables ou défavorables. Les réactions des poissons sont décrites dans les mêmes termes : les animaux se cachent, se retournent, mangent, remontent à la surface, vont et viennent, se saisissent ou non de l'appât. Il s'agit manifestement de poissons au caractère craintif, et dont les multiples réactions, tout à fait imprévisibles, semblent bien adaptées aux exigences de la pratique oraculaire. Pour l'époque gréco-romaine, les attestations d'une éventuelle compartimentation réelle ou imaginaire du point d'eau font défaut. Or cet aspect revêt dans la pratique hittite une importance fondamentale lors de l'interprétation. Cette différence pourrait être due à une simplification de la technique au fil des siècles ou encore à un manque d'informations détaillées sur les oracles de la période la plus récente<sup>102</sup>. Soulignons en outre qu'aussi bien dans les textes hittites<sup>103</sup> que dans ceux de l'époque gréco-romaine<sup>104</sup>, l'ichthyomancie est associée ou comparée à l'ornithomancie, avec laquelle elle partage bien des points communs.

Quant aux poissons concernés, il est vraisemblable que le MUŠ hittite soit à identifier avec un animal serpentiforme de type anguille ou murène, d'où l'utilisation du sumérogramme « serpent ». Les sources les plus récentes ne mentionnent pas ces espèces<sup>105</sup>, pourtant très répandues le long des côtes de la Lycie<sup>106</sup>. En réalité, ces derniers textes donnent rarement des informations sur le type de poisson requis pour l'interrogation oraculaire, puisque l'intérêt se portait surtout sur le comportement de l'animal.

Les données recueillies nous amènent donc à privilégier l'hypothèse d'une « parenté » entre les ichthyomancies hittite et lycienne. Cette technique oraculaire, peut-être originaire du Kizzuwatna<sup>107</sup>, mais aussi utilisée dans d'autres régions de l'Anatolie hittite<sup>108</sup>, aurait perduré en Lycie jusqu'à la période hellénistique et romaine<sup>109</sup>. Le hiatus chronologique entre les deux documentations ne peut malheureusement pas être comblé pour le moment. Si ce que nous avançons se révélait correct, cela illustrerait une fois encore le conservatisme culturel typique de la côte méridionale de l'Anatolie jusqu'à

<sup>101</sup> La question de savoir si l'*aldanni*- est un bassin artificiel ou naturel, compartimenté physiquement ou de façon imaginaire, rempli d'eau douce ou d'eau de mer reste ouverte ; voir *supra*, p. 38.

<sup>102</sup> A ce propos, il faut aussi souligner que les sources ne précisent jamais le contenu des questions posées à l'oracle tandis que, pour l'ichthyomancie hittite, on sait qu'il s'agissait surtout de consultations pour des affaires d'Etat (par exemple, pour vérifier la nature de présages défavorables concernant Mon Soleil, le grand roi hittite). Cela est logique puisque les textes en question proviennent des archives royales de Hattuša, capitale du royaume.

<sup>103</sup> KUB 22.38.

<sup>104</sup> Plut., *De soll. an.* 976 c.

<sup>105</sup> Sauf dans le cas de Labraunda, sanctuaire carien où la présence d'un oracle reste, pour le moment, douteuse (voir *supra*, note 8).

<sup>106</sup> Borchhardt 1975, p. 79.

<sup>107</sup> Dont la capitale Kummanni/Kizzuwatna est d'ailleurs citée dans le texte KBo 23.117 (voir *supra*, p. 28-30).

<sup>108</sup> Il faut rappeler que l'ensemble des textes attestant des oracles MUŠ ont été mis au jour à Hattuša, capitale du royaume hittite se trouvant au centre du plateau anatolien.

<sup>109</sup> Archi 1991, p. 89 avait lui aussi proposé de voir dans l'ichthyomancie de la Lycie historique une survivance « hittite » : « Diese Technik (= les oracles MUŠ) ist nur in wenigen Texten belegt. Es ist hier in Erinnerung zu rufen, dass in klassischer Zeit in Lykien die Bescheide aus den Bewegungen von Fischen, die sich in einem Teich befanden, abgelesen wurden. »

l'époque romaine<sup>110</sup>. Les oracles MUŠ ne seraient d'ailleurs pas les seuls à avoir traversé les siècles. A en croire R. Lebrun, les oracles KIN hittito-louvites seraient les ancêtres de la cléromancie pratiquée à Termessos à l'époque romaine<sup>111</sup>.

Les points de transmission de la tradition ichthyomantique restent encore à identifier. Le Kizzuwatna pourrait avoir joué un rôle clé dans ce processus, puisque c'est là que se situerait le berceau de l'ichthyomancie hittite.

L'autre élément qui se dégage de la lecture des témoignages d'époque gréco-romaine concerne les rapports avec la Syrie septentrionale, et notamment avec le sanctuaire de Hiérapolis/Bambyke<sup>112</sup>. L'analyse approfondie des textes nous incite à ramener cette influence à de plus justes proportions. Il a, en effet, été montré que trois oracles aux poissons<sup>113</sup> coexistaient vraisemblablement en Lycie dans la région de Myra et Limyra, l'un d'eux n'étant pas situé sur la façade maritime. Cette tradition divinatoire est donc difficile à expliquer par la seule influence syrienne sur la côte lycienne. Il faut remarquer en outre que, d'après les textes, l'oracle de Hiérapolis/Bambyke n'était pas centré sur les poissons sacrés ; ces derniers ne représentaient qu'une offrande privilégiée pour la déesse et étaient dénués de toute valeur mantique<sup>114</sup>.

L'ichthyomancie reste donc une pratique localisée, typique de la zone méridionale de l'Anatolie, autant à l'âge du bronze qu'à l'époque gréco-romaine. Reste à expliquer l'origine de cette forme de mantique attestée dans l'Egypte romaine<sup>115</sup>. Les recherches à venir fourniront peut-être des témoignages intermédiaires qui permettront d'éclaircir les relations existant entre la mantique hittite et les techniques oraculaires lyciennes, peut-être au-delà de la seule ichthyomancie.

<sup>110</sup> Cf. Bryce 1986, p. 172 sur l'origine anatolienne de nombreuses divinités lyciennes. Lebrun 1990, p. 190 parle d'« une région où la tradition louvite résista face à l'hellénisme triomphant ».

<sup>111</sup> Lebrun 1990, p. 187-188 (ce type d'oracle est attesté dans deux inscriptions datées de 200-300 ap. J.-C.). Bryce 1986, p. 198-199 envisage la possibilité que l'origine de la pratique oraculaire attestée dans le sanctuaire d'Apollon à Patara soit elle aussi « hittite » (oniromancie ?)

<sup>112</sup> Voir *supra*, p. 8.

<sup>113</sup> Il s'agit de ceux de Soura/Myra, de la source du fleuve Limyra, de Dinos (?). Pour l'hypothèse d'un oracle aux poissons en Carie, cf. Laumonier 1958, p. 59-60 (cf. *supra*, note 105).

<sup>114</sup> On remarquera également que les poissons, à Hiérapolis, sont consacrés à la déesse Atargatis, tandis qu'en Lycie, quand une divinité est mentionnée, il s'agit toujours d'Apollon.

<sup>115</sup> Cf. Gascou à paraître dans les *Mélanges Worp*.

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## **BARCIN HÜYÜK IN THE PLAIN OF YENİŞEHİR (2005-2006) A preliminary note on the fieldwork, pottery and human remains of the prehistoric levels\***

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### INTRODUCTION

Barcın hüyük was put on the archaeological map under the name of Yenişehir II when David French carried out surveys in the region east of the Sea of Marmara in the 1960s. When we began excavations on that spot we renamed the mound after the nearby village, of which the official name is Barcın.

The mound is one of the few sites in this region that belong to the earliest settlement period, the Neolithic. That is why it has become an object of research in the framework of the “Early farming communities in the eastern Marmara region” project that has been carried out under the auspices of the Netherlands Institutes in Leiden (NINO) and Istanbul (NIT) during the last twenty years.

The early farming project was set up with the aim of throwing light on the spread on early farming from the formative zone in southeast Anatolia and the Levant towards Europe. Although the surroundings of the Sea of Marmara hold a strategic position as a contact zone between Asia and Europe, this region remained a blank on the prehistoric map for a long time. The excavations of Ilıpınar were the first systematic attempt to find out whether the alluvial plains of this region were colonized by early farming communities (fig. 1). Ilıpınar, situated west of Iznik Lake, was founded eight thousand years ago and exhibited a full-fledged farming economy (Roodenberg and Alpaslan Roodenberg, 2008). The second mound of interest was Menteşe, situated in the plain of Yenişehir in quite similar environmental conditions. Soundings revealed that this settlement was already occupied by the middle of the seventh millennium thereby advancing the colonization at a time when the earliest farming settlement appeared in the southern Balkans (Roodenberg et al. 2003). Consequently the Marmara region plays a new role in the debate how farming spread to Europe.

As in the case of Ilıpınar and Menteşe, Barcın is located on the border of two catch areas: the spurs of the mountain ridge separating the Iznik and Yenişehir plains and the marshy surroundings of a lake. The sub-recently drained lake of Yenişehir may have stretched until close to the Barcın mound during the prehistoric period, and even today

\* Excavations were carried out under the accountability of the Museum of Iznik during the summers of '05 and '06. Participants were S. Alpaslan Roodenberg responsible for general organization and analysis of human remains, B. Claasz Coockson for drawings, and a number of students. J. Roodenberg kept the scientific responsibility of the project. From 2007 on excavations at Barcın were continued by F. Gerritsen and his team.



marsh vegetation grows at a close distance. The inhabitants, however, must have depended of running water from nearby springs as was customary at Menteşe and Ilıpınar.

## THE EXCAVATIONS

Although hardly visible in the field, Barcın consists of a twin mound connected with a low saddle (fig. 2). There is a circular main elevation with a diameter of ca. 120 m and a lower one of ca. 50 m. The main elevation is, measured from surface level, 4 m high, and the second 2.5 m high. The saddle, the zone between the central points of these elevations, which are distant from each other by nearly 300 m, is characterized by tile fragments indicating that there was originally a Byzantine graveyard here.<sup>1</sup>

The initial seasons of 2005 and 2006 revealed occupation on the main mound from the Neolithic through the Roman period. Barcın's north and south flanks carry the thickest deposits of the more recent time periods, namely the Bronze Age and Roman occupation remains, while the older core of the mound with Late Chalcolithic and Neolithic deposits were located below its centre. As was suggested by observations made in the squares M10 and L11 (fig. 2), these deposits, that are in the shape of a ridge and left over from drastic soil removal operations of subsequent periods, run east-west.<sup>2</sup>

As a result of thorough tunneling by many generations of voles, most of the occupation remains to 1.5 m below the ground surface have been destroyed. These remains primarily date to the Bronze Age. The disaster of voles probably struck and continues to strike the entire plain of Yenişehir including the mound of Menteşe. Fortunately, our focus point of interest goes beyond this distance in depth as well as in time. We have established that the lower deposits of the mound were generally not invaded by these frantic burrowers.

The Late Chalcolithic deposit in the centre of the mound is about one meter thick and overlays the Neolithic occupation levels. Although no substantial structures came to light, lumps of burnt mud with post impressions hint to habitation on the spot. The graves of an adult and a child belong to these levels (see below). The child burial – in a large vessel (fig. 3) – provide parallels to the contemporary graveyard at Ilıpınar where two such burials were uncovered (Roodenberg, 2008:315).

The Neolithic occupation debris were recognizable as follows: building materials consisting of chunks of burnt mud with chaff impressions marked the top of Barcın's oldest habitation deposit, which is according to our drillings more than 2.5 m thick. So far no building plans could be exposed, because of the limited size of the deepest sounding in square M10, and by the fact that the top of the Neolithic horizon has just been reached in the larger exposure in the adjacent square L11 (fig. 4). Still a number of features such as oven remains, bins, refuse pits and human graves cleared in M10 hint at a courtyard

<sup>1</sup> An account on the Byzantine cemetery at Barcın excavated during the 2005 and 2006 seasons including an anthropological study of the human remains will be given by the same authors in a separate publication.

<sup>2</sup> Along the east section of M10 a 4 m wide trench was dug down in order to speed up the study of the stratification of the archaeological deposit.

context. Consequently, there is reason to expect that a village plan will appear as soon as larger exposures are excavated.

The results of the short initial campaigns have been rewarding from a point of view of sampling strategies. The upper and middle levels of the Neolithic settlement have been radiocarbon dated between  $7470 \pm 60$  and  $7310 \pm 40$  BP (fig. 5). These dates belong to the oldest evidence for settlement occupation in the wider region, stressing the importance of Barcın for the spread of early farming in Northwest Anatolia. Other samples give dates for the late Chalcolithic period ( $4990 \pm 40$  BP), the Early and Middle Bronze Age respectively ( $4125 \pm 40$  BP and  $3210 \pm 40$  BP). A single radiocarbon date confirms that the Late Chalcolithic occupation of Barcın is contemporary with the Ilıpınar's phase 4 graveyard comprising forty Hocker burials where the dead were buried with pottery vessels and copper tools (Roodenberg, 2008). In spite of this contemporaneity the pottery from both locations, they do not display close affinities. The one group being genuinely domestic, while the other was probably of a funerary type. This is in contrast with the EBA remains from Barcın and Ilıpınar-Hacılartepe which materially and chronologically match with each other rather well.

Barcın turns out to be quite rich in decorated boxes with incised geometric patterns. This vessel type that occurred sparsely in basal Ilıpınar, was more frequent at Menteşe's ca. 6200 BC dated levels, but absent in the deeper deposits. Following the so-called Tell Fakhariyah effect, a number of box fragments were retrieved from more recent occupation debris of Barcın. The ones shown here, however, were all found in a reliable context dated grosso modo between 6400-6200 BC (fig. 6).

What has been established already through the excavation at Menteşe is confirmed by this evidence: these (first?) communities in the eastern Marmara landscape were part of a cultural province showing close affinities with the Fikirtepe culture. The excavation results from Barcın further approved the outcome from the soundings at Menteşe signifying that the roots of this regional culture of northwest Anatolia were already planted in the middle of the 7<sup>th</sup> millennium (Roodenberg e.a., 2003:37).

## THE POTTERY

A first glance at the Neolithic pottery shows an assemblage from bowls with everted rims to slightly S-shaped profiles to squat hole-mouth vessels (fig. 7). Vessels are frequently provided with vertically pierced lugs and knobs, but tubular handles also occur. The technological aspects of this pottery are based on a preliminary study of the complete vessels and a representative sample of 260 sherds.

Marks left by the potters give evidence for the application of the pinching and coiling technique. If pinching was used, the size of the small pots was limited by the size of the potter's hands. If the coiling technique was used the base was made first, either by flattening a piece of clay, or in a mould. Next, the pot was built up in coils of clay. The marks of the primary forming technique were often erased by traces of smoothing and burnishing. Burnishing is a method to make the vessels slightly waterproof. A more effective method, however, is to grease the vessels with resin. Opposite to the closed

forms, the open forms could easily be burnished on the inside. The closed forms were only burnished on the outside, and in some cases also on the upper inside of the neck. In most cases the burnishing marks run in a horizontal direction. Vertical and criss-cross marks were also observed. The gloss of the burnished pottery varies. Most vessels are mat finished. A small number of vessels have a high gloss. After burnishing, some vessels were decorated with geometric patterns made with a sharp tool in the still wet clay. Other vessels bear an appliqué decoration.

Colour and hardness give indications about the original firing conditions. The surfaces of the pottery are often in mottled colours varying from 5YR 3/1 (very dark gray), 10YR 4/1 (dark gray) to 2.5YR 3/4 (dark reddish brown), 10YR 5/3 (brown), 7.5 YR 6/4 (light brown) and 5 YR 5/6 (yellowish red). This points to the use of a bonfire, in which various firing atmospheres (reducing, neutral and oxidizing) may occur. The darker colours are dominant. The colours of the core of the sherds vary from 7.5 YR 3/1 (very dark gray), 10YR 4/2 (dark grayish brown) to 7.5 YR 6/4 (light brown) to 5 YR 6/6 (reddish yellow). A black core occurs when the carbon inside the body has not been successfully burnt out. The black and red pottery seems to be the result of a certain control of the firing conditions. In order to produce vessels of a uniform black colour, the potters had to ensure that the fire was smothered at the right moment when the pottery was very hot. For the production of the dusky red vessels the potters must have taken care to create a completely oxidizing firing atmosphere. The hardness (Mohs hardness numbers 2 and 3 are prevalent) of the sherds points to the normal temperatures of an open fire (ca. 800 °C).

A macroscopic analysis of the fabric shows that the paste used by the potters is composed of mineral inclusions and voids of burnt out organic tempering material. The mineral inclusions comprise mixed sand consisting of quartz, lime, glimmer and other minerals. The very fine pores indicate the use of dung as tempering material. Varying amounts of coarse fibers, also visible on the surface, are mainly found in the category of rough pottery.

The Neolithic pottery is reminiscent of the pottery assemblage of the basal layers of Menteşe, with the exception of specimens of a fine, thin-walled ceramic of a chocolate-brown shade and very shiny surface, decorated with a triangular pattern of parallel lines in whitish paint (fig. 9, sample nos 239-240). The refined manufacture and decoration designate the latter pottery type as an import.

A sample of 90 Late Chalcolithic sherds shows the same technological characteristics as the Neolithic pottery. For a selection of the forms including carinated bowls and pots see fig. 8.

## THE PREHISTORIC BURIALS

In spite of the small soundings in the prehistoric levels five burials, two from the Late Chalcolithic, the remaining from the Neolithic period.

## **The Late Chalcolithic period**

### *Burial UN*

Remains of a baby were found in a jar in square L11 (fig. 3). The baby lay in a contracted position on his left side. The jar mouth was closed with a big pottery sherd. The bones which were very fragmentary belonged to the pelvis, vertebrae, ribs, femur and cranium. Circa 50 beads made of bone were collected after sieving the soil from inside the jar showing that the baby probably wore a necklace. A precise age determination was not possible because of the fragmentary state of the bones and the absence of dental remains.

### *Burial UA*

This burial was uncovered in the sounding trench of M10. The somewhat disturbed grave included the skeleton of a young male (fig. 9). The skull and some of the long bones had slightly shifted from their original position probably by the underground animal activities. The deceased lay in a contracted position on his left side, oriented E-W, facing North. Sex determination was possible from the skull, mandible and fragmentary pelvis which demonstrated strong male features (WEA, 1980). Dental molar wear was observed only on the first molars from both jaws in the form of a beginning dentine exposure which suggested an age between 25 and 30 years (Brothwell, 1981). His stature could be reconstructed by his right humerus (see below). Absence of caries or dental diseases proved that his dental health was good, while the degree of calculus formation was recorded as medium. Two incisors were missing postmortem (ULI1 and LRI1). On the preserved bones no pathologies were recorded.

## **The Neolithic Period**

### *Burial UB*

This burial was represented by cranial fragments only which were found in the southwest corner of the sounding trench in M10. Cranial suture obliteration showed that it was the skull of a rather young adult (Acsadi en Nemeskeri, 1970). There were no postcranial remains which means that the remaining skeletal parts were probably still under the west section of the trench.

### *Burial UC*

It belonged to an adult who was interred in the centre of the sounding trench of M10 in a contracted position on his left side, and oriented W-E (fig. 10). No grave pit was recognized. The skeleton lay in the middle of oven debris suggesting that the grave pit had destroyed the oven. Pieces of wood underneath the skeleton suggest that the dead was buried on a wooden plank (fig. 11). According to some cranial features it was a female (WEA, 1980), while the degree of occlusal wear of two isolated molar teeth made this female a middle aged individual (Brothwell, 1981).

The very fragmentary bones included cranial pieces, fragments of femur, tibia, vertebrae, metatarsal bones, talus, naviculare, hallux and phalanges.

### *Burial UD*

These human remains which looked as if they were dumped lay close to the North section of the same trench and belonged most likely to a secondary burial. They were in all probability from a female since small mastoid bones and thin zygomatic processus showed clear female features (WEA, 1980). The bones were very fragmentary: cranial pieces, a small mandible piece without teeth, and pieces from pelvis, vertebrae, scapula, ribs and humerus.

### **Conclusion**

All prehistoric burials and from the sounding trench of M10 were adults, the only child was found in L11. The baby was interred in a jar, a mortuary custom which is typical for the Late Chalcolithic and Early Bronze periods as was observed at Ilıpınar (Roodenberg, 2008). A second Late Chalcolithic burial, UA, was from a male. Two of the Neolithic burials (UC, UD) were from females, while the sex of the third (skull remains UB) remained unidentified (see table 1).

<b>Burial code</b>	<b>Square</b>	<b>Period</b>	<b>Year</b>	<b>Sex</b>	<b>Age at Death</b>	<b>Special Features</b>
UN	L11	Late Chalcolithic	2006	-	infant	bone beads
UA	M10	Late Chalcolithic	2005	Male	25-30 years	-
UB	M10	Neolithic	2006	-	young adult	-
UC	M10	Neolithic	2006	Female	middle aged	wood pieces
UD	M10	Neolithic	2006	Female	-	secondary burial?

Table 1. Prehistoric burials from Barcın Hüyük.

UA and UC were still fairly well intact; they were single and primary burials respectively oriented E-W and W-E and interred in a contracted position on their left sides.

There is no reason to assume that skull UB was buried separately, since no case of decapitation is known from the eastern Marmara region in the Neolithic period. It is therefore very likely that the body is still lying under the west section of the trench. The skull remains point to a rather young adult.

UD was found near the north section of the trench. It was no regular burial, because the collected bones were disarticulated, almost all broken and in small pieces. Hence the conclusion that it was a secondary deposition. These remains most probably belonged to the same individual – a female.

Underneath middle aged female UC some pieces of wood were recognized suggesting that this woman was possibly laid on a wooden plank. The use of a bier or paving grave pit bottoms with planks apparently belongs to the Neolithic funerary tradition of the Iznik-Yenişehir region where it was well documented at Ilıpınar and Menteşe (Alpaslan Roodenberg, 2001; 2006).

From the soil in jar UN which included baby remains 50 small bone beads were collected that had probably constituted a necklace. Similar finds are not known from Late Chalcolithic child burials as these are rare from the latter in contrast to those from the

Neolithic period when such attributes were noticed in associated with the burials of females or children.

The stature of the male from the Late Chalcolithic burial UA could be reconstructed: 167.1 ( $\pm 4.57$ ) and 164.1cm ( $\pm 4.23$ ) according to the applied regression formulas for American white and blacks respectively (Trotter and Gleser, 1952, 1958). From Neolithic Ilıpinar and Menteş  stature recordings from males show similar values, 168.9 and 164.4cm for Ilıpinar and 168.0 and 163.1cm for Menteş <sup>3</sup>. Anthropological evidence from both sites has demonstrated that the most suitable regression formula for calculating statures of the prehistoric population in this part of Anatolia is the one for blacks (Alpaslan-Roodenberg, 2008).

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<sup>3</sup> From Ilıpinar the mean value of 5 males is given, from Menteş  the mean value of 3 males (Alpaslan Roodenberg, 2008; Alpaslan Roodenberg, 2001).

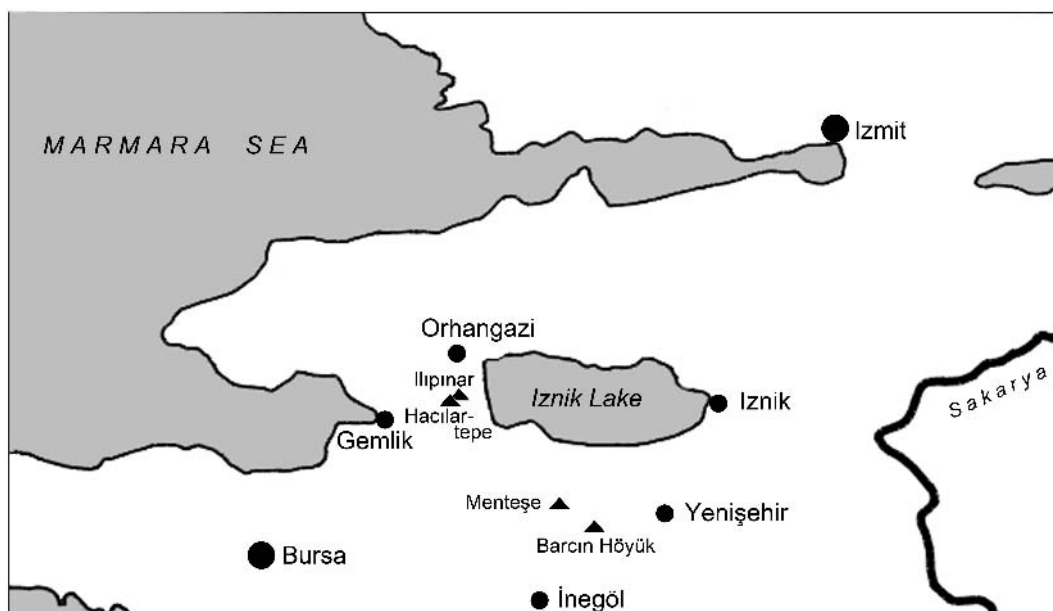


Fig. 1. Map of the region of Iznik-Yenişehir with the investigated prehistoric sites (▲).

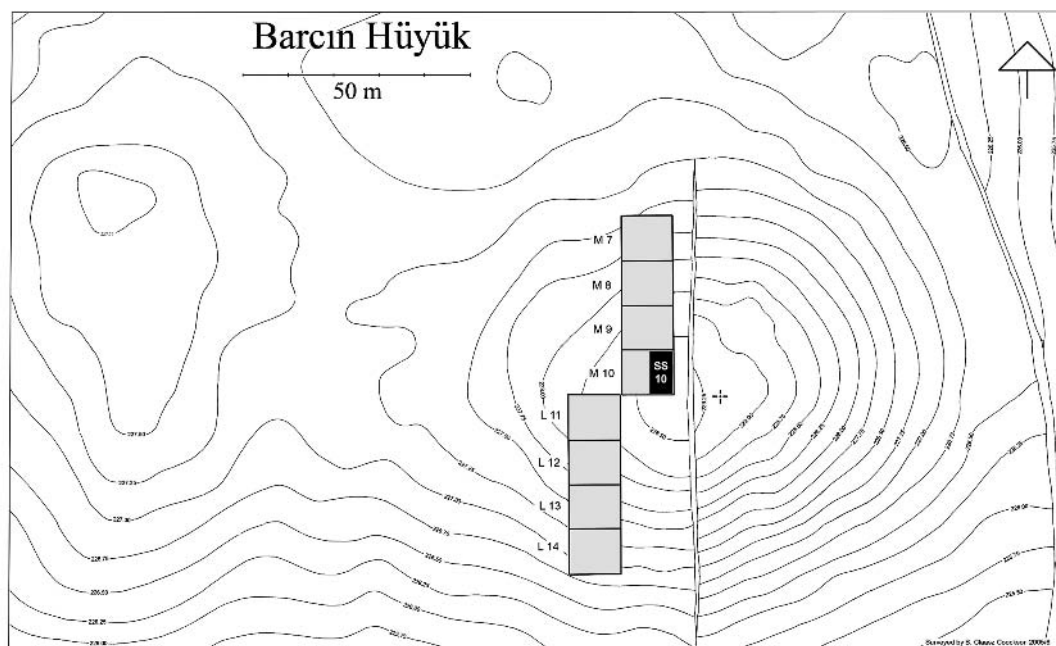


Fig. 2. Contour map of Barcın hüyük with squares opened in 2005-2006.



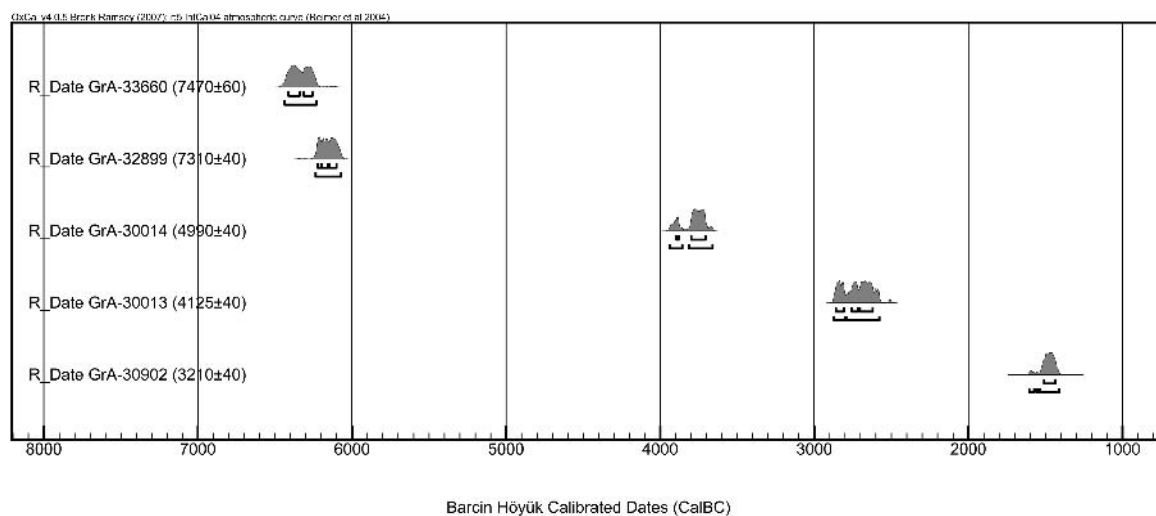


Fig. 3. Late Chalcolithic jar including skeletal remains of a baby.



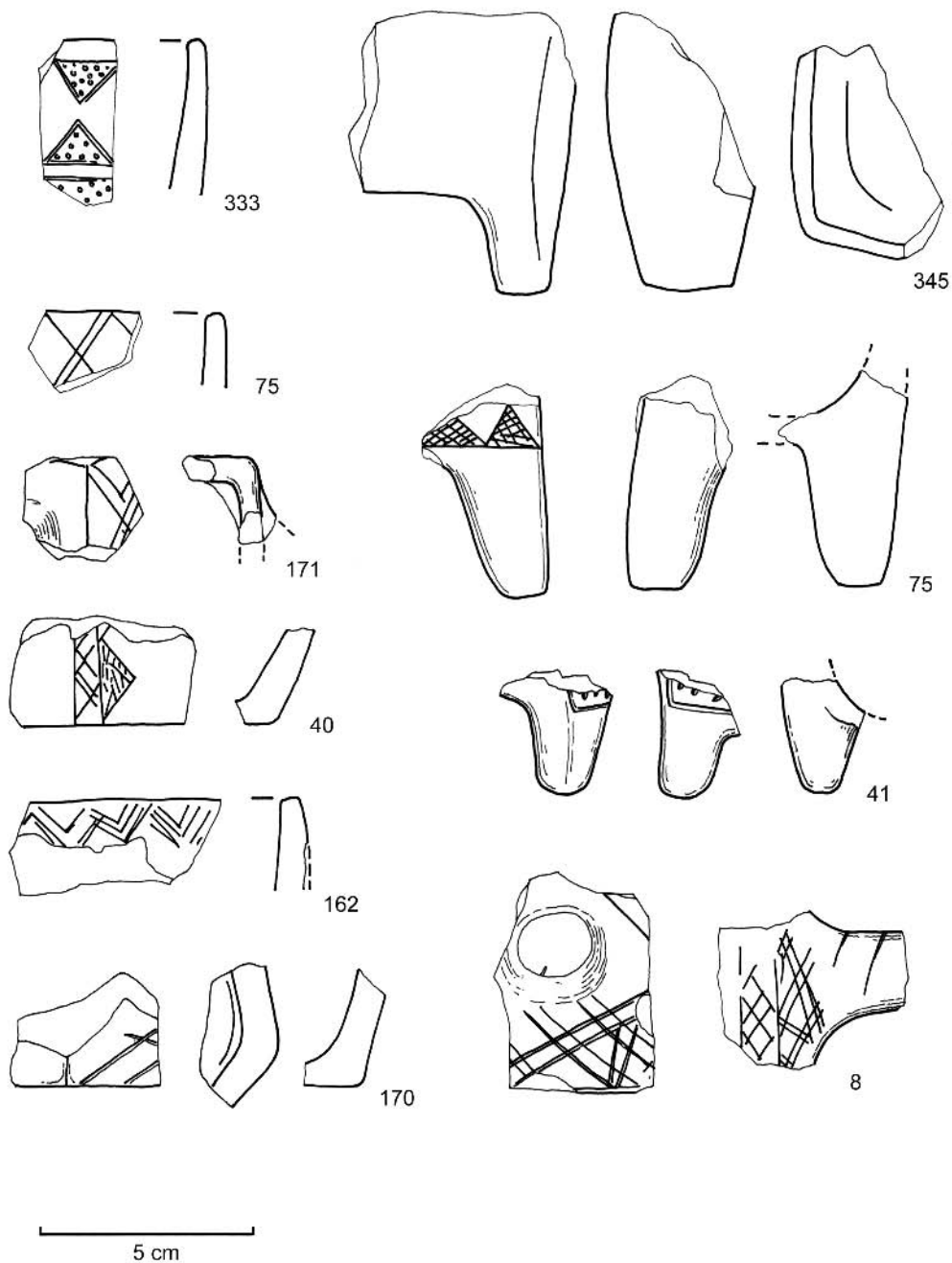
Fig. 4. Burnt building materials indicating the top of the Neolithic deposit in square L11.





	cal BC (1 sigma)		cal BC (2 sigma)	
3210±40BP	1510	1435	1610	1400
4125±40BP	2860	2620	2880	2570
4990±40BP	3900	3700	3950	3650
7310±40BP	6230	6100	6240	6060
7470±60BP	6420	6250	6440	6230

Fig. 5. Radiocarbon dates from Barcin 2005-2006.



Drawn by B. Claasz Cockson 2008

Fig. 6. Box fragments with incised geometric motives from the Neolithic level.

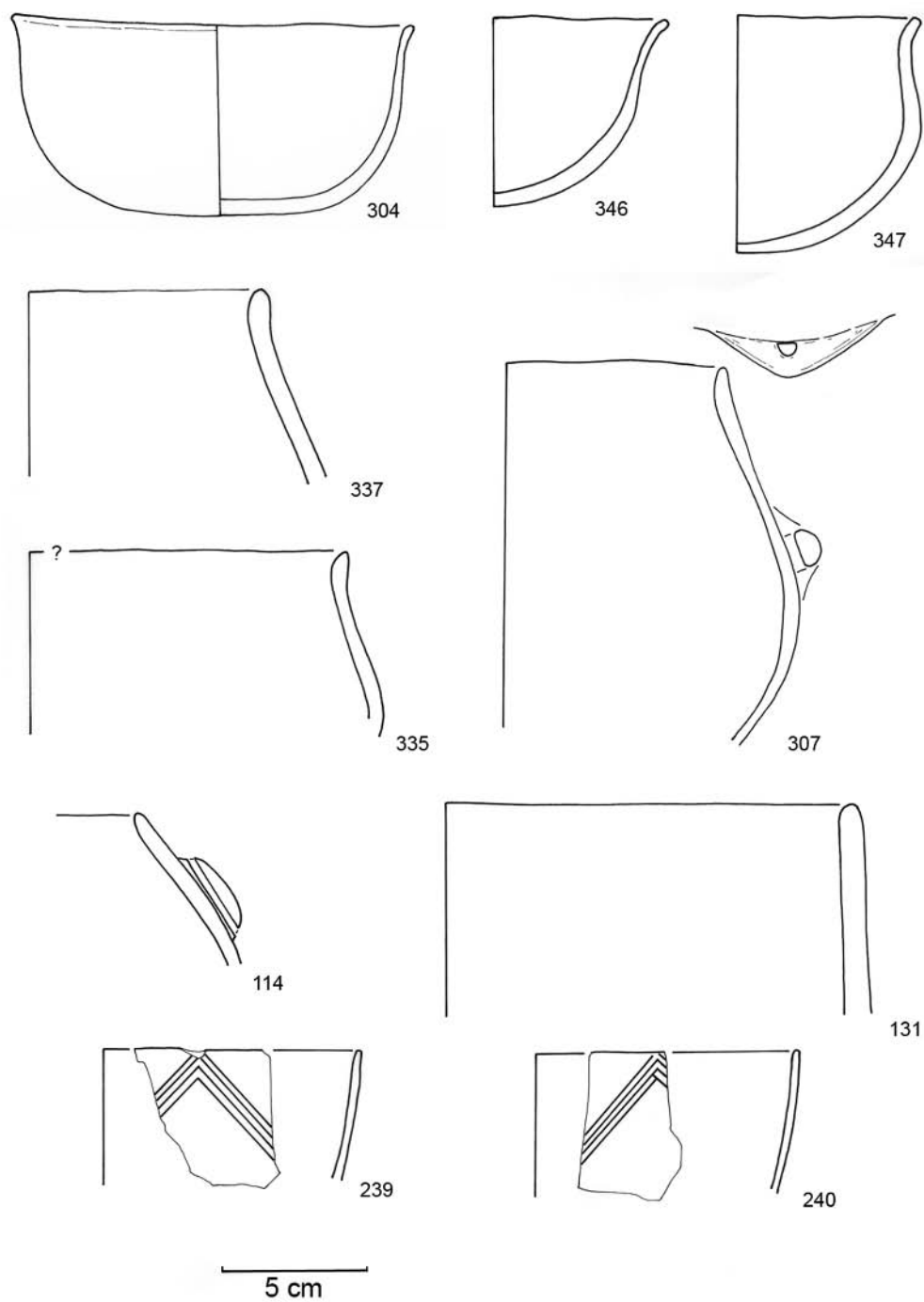


Fig. 7. Typical vessel shapes from the Neolithic level.

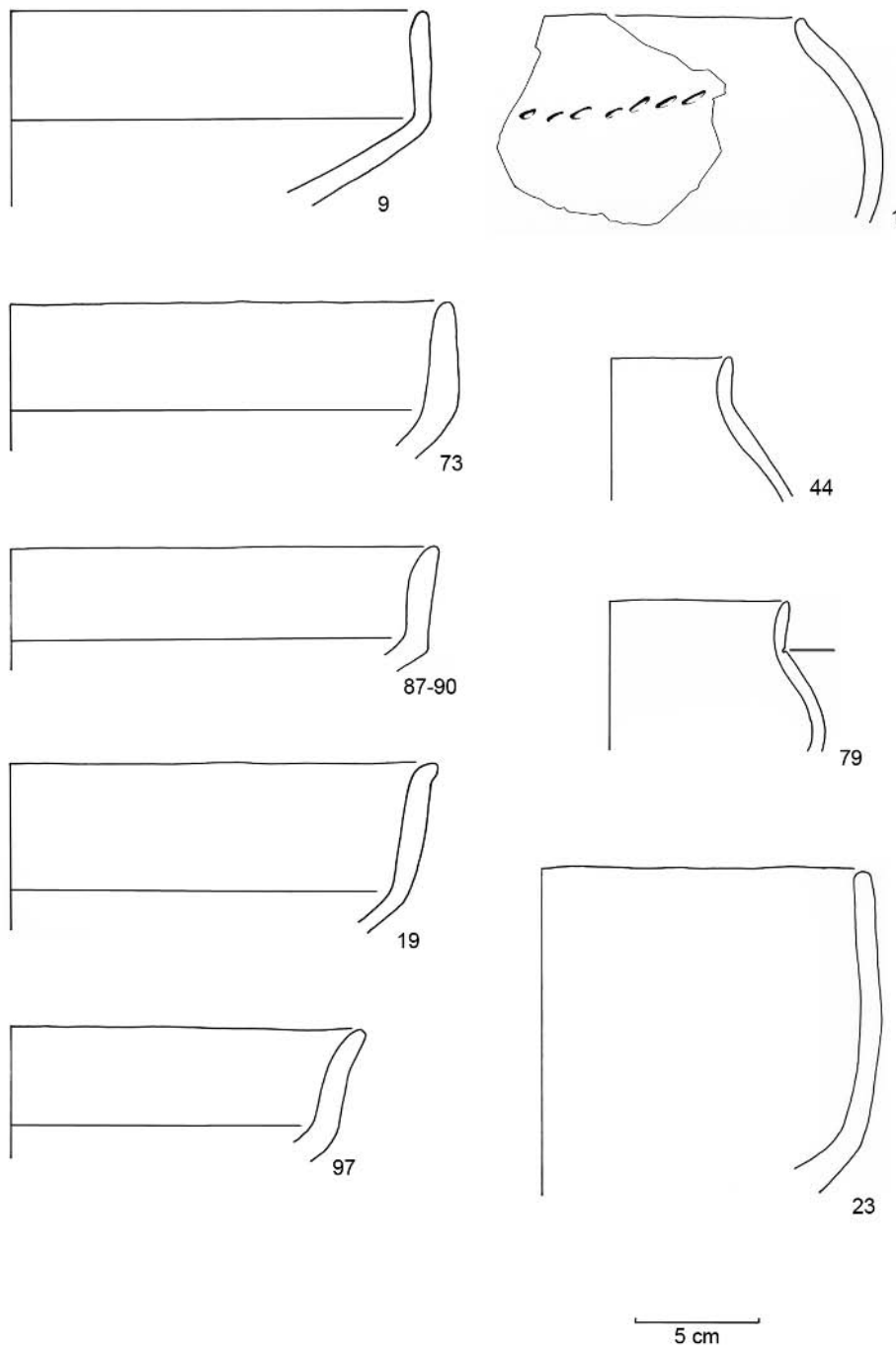


Fig. 8. Late Chalcolithic vessel shapes.



Fig. 9. Burial UA from the sounding trench in square M10.



Fig. 10. Burial UC whose skull was inconsiderately removed by the excavators.

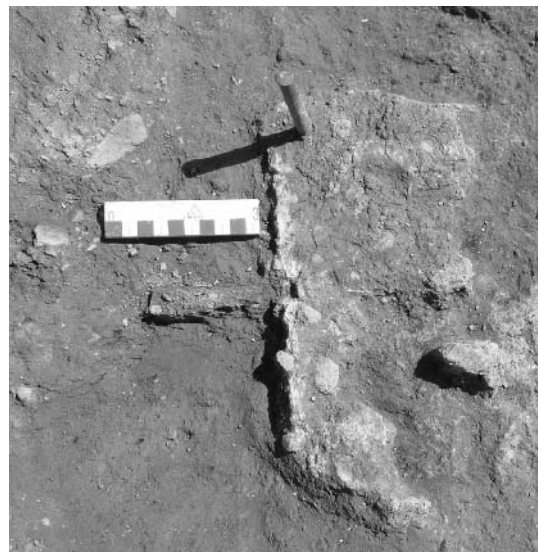


Fig. 11. Wooden plank remains underneath burial UC.

## COMPLEX TWO IN THE EARLY BRONZE II UPPER TOWN OF KÜLLÜOBA NEAR ESKİŞEHİR\*

With an appendix on the faunal remains by Can Y. Gündem

*Turan Efe and Erkan Fidan*

### I. INTRODUCTION

The large prehistoric mound of Küllüoba is an irregular oval some 300 x 150 m, rising nearly ten meters above the plain level in the rolling cultivated fields in the west of the upper Sakarya (Sangarius) basin just north of the Phrygian Highlands: 35 km SE of Eskişehir, 15 km NE of Seyitgazi and 1.3 km south of the village of Yenikent. The mound itself – on the northern slope of an ancient stream bed, now dry – is comprised almost exclusively of prehistoric deposit. Later remains in the general vicinity represent late Hellenistic times.

Excavations were begun in 1996 under the under the auspices of Turan Efe from Istanbul University.<sup>1</sup> Financial support for the Küllüoba excavations has been provided by the Research Fund of Istanbul University,<sup>2</sup> DÖSİM (the Turkish Ministry of Tourism and Culture), and the Institute for Aegean Prehistory (INSTAP). We sincerely thank these institutions for the assistance we have received.

Excavation so far has concentrated mainly on the Eastern Sector of the mound. All phases of the Early Bronze Age are in evidence, underlain by Late Chalcolithic deposit. The latest prehistoric material on the settlement mound itself comes from the late EB III, i.e. the period transitional to the Middle Bronze Age. The entire sequence of the EB III seems to be represented on top of the mound, bringing the Early Bronze Age accumulation to a depth of nearly five meters.

Thus after 12 seasons of excavation at Küllüoba, we now have a reliable uninterrupted sequence covering the entirety of the Early Bronze Age. The rich collection of finds from stratified contexts – providing comparisons with both the immediate surroundings and areas more remote – link the previously known EBA chronologies of western and Central Anatolia.

The EB I and II pottery displays the local characteristics of the so-called Upper Sakarya Pottery Zone, which roughly encompasses the plains of the Upper Sakarya and the eastern part of Phrygian Highlands.<sup>3</sup>

\* This article is dedicated to the memory of Jean Dick Carpenter Efe with respect and gratitude.

<sup>1</sup> Principal publications on the Küllüoba excavations include Efe 2002, 2003a, 2003b, 2003c, 2004, 2007a, 2007b; Efe, Efe (in print), Efe-İlaşlı 1998, Efe-Ay 2000, Efe, Ay-Efe 2001.

<sup>2</sup> Project nos.: 1090/010598, 805/190496, 1258/050599, 1404/5052000, 1587/30042001, 1/27082002, 70/150522003, 218/29042004, 334/03062005, 532/05052006, 542.

<sup>3</sup> On the “Upper Sakarya Pottery Zone”, see Efe 2003c, 90ff.; Efe, Ay-Efe 2007, 252ff., figs. 2-3.

The zigzag fortification wall and the adjoining houses from the period transitional into the EB I in the Western Sector appear to represent an early development of the radial settlement plan seen at Demircihüyük and introduced by M. Korfmann as the *Anatolisches Siedlungsschema*. The long houses characteristic of this developed scheme, however, are not yet dominant at Küllüoba.<sup>4</sup>

While we have uncovered relatively few architectural remains in the EB I period, those of the EB II period (that most thoroughly investigated at the mound) demonstrate upper and lower towns which suggest that a pre-concieved settlement plan was in use as early as the period transitional to EB II. Investigations so far have concentrated mainly on the upper town; architecture in the lower town has been exposed only in a relatively small area in the fields to the SE of the mound (Grids Aİ 23/24, AJ 23/24). It should be remarked here that we were able to trace a divergence in the architectural layout in the final phase of the EB II (IVA). Parallel to this architectural development, certain innovations are apparent in the traditional pottery repertory as well. Therefore we designate this phase as “transitional into EB III.”

## II. THE GENERAL LAYOUT OF THE EB II UPPER TOWN

The irregularly running zigzag fortification wall surrounding the upper town follows the contours of the earlier topography of the mound to a great extent. It displays three main phases. Two gates have so far been uncovered in the eastern and southern part of the upper town (acropolis): the East Gate and the South Gate (Fig. 1). There was apparently an open area between the citadel and the lower settlement. It would seem that the configuration of the upper and lower cities had begun as early as the beginning of the EB II period. The acropolis represents a rather linear settlement plan with long houses adjoining the fortification wall at their backs and three large complexes (Complexes I-III), possibly administrative in function, in the center, two of which are completely independent in structure. Between the houses and complexes are courts and streets. The emergence of upper and lower towns – as well as the inclusion of buildings possibly administrative in use as early as the EB II – opens new perspectives on the emergence of urbanism and sociopolitical structure in inland western Anatolian settlements of this period.

It now appears that Complex I and the other structures surrounding the court in front of it may have formed one large entity. This is suggested by the absence of an oven in the complex itself and the existence of at least two kitchens (each with an oven and a hearth) to the north of the East Gate, as well as what seem to have been storerooms limiting the court on the north and east. The structures to the south of the court await further investigation. The East Gate opens into the central court directly opposite the entrance to Complex I (see Fig. 1).

Complex II was built on the southern slope of the mound, oriented NE-SW with the facades of three megara facing SW. To the south runs a wide street bordered by long

<sup>4</sup> See Efe, Ay-Efe 2001, fig. 1.



houses facing the complex. To the north of the complex, on the other hand, is a large open space (court?) with a depression in the middle.

The structures limiting this open space – bordered on the east by the back of Complex I – to the north have not yet been investigated. It seems very likely that a north gate to the acropolis opened into this court, and that there was also a gate west of Complex II. The streets and the open courts served to convey pedestrian traffic between the gates, structures and complexes.

This article deals with the architecture of the two upper phases of Complex II that correspond to Settlement Phases IV C and IV B (Fig. 8).

### III. COMPLEX II

#### III A. Construction materials

##### *III A.1. Stone*

Stone was generally employed in the foundations and as a paving material in the open spaces. Because the mound is situated at the very center of a plain surrounded on three sides by low mountains, the stone must have come from the foothills of these mountains, a good 10-15 km away. As a result, stone was usually used only sparingly – where exposed to the elements: in the exterior foundations of the houses and in the fortifications. The interior partition walls of the structures were generally built without foundation stones.

The stones used were field stones and quarry stones (slabs varying in dimension). The quarystone slabs display cut edges (Fig. 15). Some are as long as 1.50 m. The standing stones in the settlement (up to 2 m in height) were likewise fashioned from quarystone (Efe, Ay-Efe 2001, ill.12). Very large stone boulders were also sometimes used in the lower courses of the foundations.

##### *III A.2. Mudbrick*

As in the whole of the Anatolian highlands, the principal construction element is mudbrick. It is either red or grayish in color, without temper. The charcoal particles present in the gray bricks are the proof that they were produced from batches of paste mixed with ash. Both kinds are normally used together in the walls.

Dimensions of the bricks most frequently used in the construction of the complex are as follows: 24 x 42 cm, 32 x 50 cm, 36 x 40 cm, 36 x 54 cm, 40 x 52 cm, and 52 x 66 cm. The thickness varies between 6 and 8 centimeters. Clay was used as mortar between the bricks; sometimes mortar was simply placed as lumps on the upper surfaces of the courses, with the bricks in the following course pressed down upon it. Then both faces of the walls were plastered with a layer of clay six to seven centimeters thick and whitewashed in white or yellow hues. The exposed faces of the foundation walls were also plastered.



### *IIIA.3. Wood*

Wood is found used in the walls as well as in flooring and roofing. Wooden planks were often laid upon the stone foundations to form an even surface for the mudbrick walls above. It was occasionally also found between the mudbrick courses (Fig. 13). Wooden posts were sometimes erected in the corners of the houses (Figs. 4 and 15) as well as within the rooms as supports for the roofs. Wood was also used for door frames, and the good number of rooms without plastered floors were most probably covered with wood.

## **III B. Architectural phases**

Building activities in the area of Complex II most probably go back at least as early as the beginnings of Phase II E, in which a substantial rebuilding of the earlier fortification wall had been undertaken. The complex subsequently survived with additions, rebuildings and alterations over a long period of time.

Since the northern units of the complex have been excavated to various depths, it is difficult to gain a general impression of the early phases of the complex. Therefore, the earlier two phases of the complex (IV E-IV D) have not been included in the architectural study presented here (Fig. 8).

One very likely possibility is that the structure originally represented residences – row houses similar to those discovered in the lower town to the SE (Trenches Aİ 23-24 and AJ 23-24), developing into an independent complex only with the new additions and arrangements of phase IV D, in which the large megaron was first constructed along the southern wall of the building. To begin with, the megaron had only two rooms (no back room). In the succeeding Phase IV C, then, the back room was added, and finally in Phase IV B the interior arrangement of the entire complex seems to have been changed considerably.

In the last phase of the EB II period (IV A), when drastic changes in the architecture – accompanied by certain innovations in the ceramic repertory – took place at the site, the complex most probably went out of use.

### *IIIB.1 The complex in Phase IV C*

By Phase IV C, the outline of this large freestanding complex had reached its eventual dimensions (30 m E-W by an average of 24 m N-S). Comprised in this phase of roughly rectangular rooms, the outline itself nevertheless did not form a complete rectangle; the three western facades receded in steps of different proportions (Figs. 2-3, reconstruction drawings Figs. 4-5).<sup>5</sup> The complex slopes gently downward from NE to SW (see Fig. 2).

The complex is comprised of five units with independent walls and entrances. The units have been designated with upper-case letters (A-E), and the rooms in each unit are independently numbered with Arabic numerals (Fig. 3). Units A, C, and D, megaron or megaroid in plan, open to the west. Unit A is a large megaron with three rooms (A1-A3); it extends along the south of the complex. The six rooms in Unit B are not homogeneous

<sup>5</sup> Our sincere thanks for these drawings go to Murat Afşar, a graduate of our department.

in layout and nearly barren of interior architectural features. The bins in the three rooms C2, D1 and E1 (designated with lower-case letters) – display more-or-less the same interior layouts (see Fig. 3) and most probably functioned as storage facilities. Unit E protrudes considerably outward from the northern face of the complex.

### *IIIB.1.a The large Megaron (Unit A)*

The megaron has three rooms and a porch in antis. The central room is the largest. The foundation stones of the side walls as well as the partition wall limiting the central room on the west were partially robbed out by the Yenikent villagers (Figs. 11 and 12).<sup>6</sup> Access from the megaron into the structures annexed to the north was provided by two doors (one from the front room, the other from the central room). Due to the upward slope to the east, the floors of the megaron were set at three different levels: that of the porch and room A1, that of room A2, and that of room A3).

#### The Porch

A stone ramp provided approach to a porch created by an approximately two-meter long prolongation of the side walls. Two bins stood in the corners of the porch; between these was an entrance two meters wide. Part of the stone pavement and the entirety of the southern anta as well as the southern bin had been hopelessly disturbed during the stone robbery (Fig. 12). A patch of mud preserved on the paving stones in front of the northern anta might be taken as proof that the ramp was originally plastered with mud. There is one flat stepping-stone centered at the western extremity of the ramp. There may have been wooden stairs over the mud plaster – as reconstructed in Figure 5 – leading upward from the stepping-stone to the entrance; no remains of any wood, however, had survived on the ramp. Two wooden posts supporting the porch roof had stood between the antae; a posthole for the southern support – with plentiful remains of decayed wood – was discovered at the corner of the southern storage bin, and a small hollow in the stones near the bin to the north most probably revealed the location of the second post. The bins were built as separate structures contiguous to the walls of the porch.

#### The Front Room (A1)

The large front room measured 6.0 x 6.5 m. There appears to have been no plaster floor in this room, which was severely damaged by the wide and deep pits opened from above. The doorway into the front room of the megaron (room C1) was relatively deep due to the double wall here. Postholes for the wooden door frame flank the entrance, and two more postholes were found further southward within the room.

Before Phase IV C, only one (the eastern) partition wall stood between the front and the central rooms of Megaron A1). The large flat stone at its southern end hints at a doorway here (Fig. 2). The front and the central rooms were nearly the same size. Within

<sup>6</sup> One resident of Yenikent Village, İbrahim Özcan, described how in his youth he and his friends had followed a stone wall up the southern slope of the mound for some ten meters, breaking up and carrying off stones to sell for domestic purposes. The general location of the “quarrying” they carried out here fits that of the disturbance on the southern wall of the large Megaron we encountered during excavation (cf. Fig. 12, on the right).

this phase, a partition wall was constructed parallel to the first, one meter to the west with the entrance now at the northern end. The space between the two partition walls was found filled with layers of crumbly red and darker, more compact earth (Figs. 2, 11-13). The crumbly red earth resembles the fill spread in the rooms of the “period transitional into the EBA” excavated in the western trenches. There is no doubt that this red earth was taken from the neogen bed characterizing the floor of the plain. Unfortunately, the upper courses of the foundation stones in the eastern partition wall and the northern part of the earthen fill were destroyed. The many stone chips here suggest the activity of stone-robbers; red earth was also found scattered over the disturbance, both between the walls as well as along the western face of the partition wall to the west. The earth fill, the southern part of which was preserved up to one meter, formed a podium between these two partition walls upon which there must have been a staircase or ramp probably covered with wooden planks. Such a facility was now necessitated here due to the new difference between the floor levels of the two rooms described below. Beyond the doorway in the first partition wall, one would have turned to the right to ascend into the central room, the entrance to which must have been at the southern end of the wall, just above the earlier one. The ramp or staircase most probably provided access onto the roof of the front room as well.

#### The Central Room (A2)

This central – and now clearly the largest – of the three rooms in the megaron measured 6.0 x 8.5 m. The ground level on the interior now rises steeply from all four sides (most pronouncedly from the west) towards a round hearth at the center, the original surface of which has partially survived (Figs. 11 and 12). That this hearth was positioned so much higher than the floor/ground/base levels alongside the four walls (a 1.00 m difference in the west and a 0.60 m difference in the east) suggests that an elevated wooden floor had existed here. Such an arrangement would not only explain the need for a staircase between the two rooms, but would also have justified the use of much larger foundation stones in this central room (Unit A2); the boulders employed here would have supported a much higher roof (Fig. 12). The exterior faces of the foundations are neatly built; the interior faces, on the contrary, are very irregular, with some stones jutting out into the room and extra stones lying alongside the walls (Figs. 14 and 15). Where mudbrick wall is preserved atop the stone foundations, traces of horizontal wooden beams were found between the courses (Fig. 14). In the mudbrick of the eastern wall there also appears a hollow from the end of a horizontal beam laid perpendicularly atop the wooden plank separating the mudbrick wall from the stone foundations. The evidence would thus corroborate the existence of a wooden floor supported by the stones protruding from the foundations. The interior ground, then, most logically bears no hint of plaster, and the thin gray ashen layer upon it should correspond to an accumulation of ash that sifted through the wooden floor. Remnants of a massive wooden post – at least 30 cm in diameter – are found vertically on a flat stone on the SE corner of the central room (Figs. 2, 4, 15).

### The Back Room (A3)

In this phase, a back room, 5.5 x 5.5 m, with independently constructed walls, was added to the megaron. The stones in the foundation of the room are relatively small. Access from the central room was provided by a doorway near the southern lateral wall of the megaron, and wooden steps were probably constructed before the doorway, as the floor of the back room lay still 0.50 cm higher than the hearth and the wooden flooring.

A small hearth was centered on the long axis of the building (somewhat more than half-way back), and in the NW corner of the room was an oven. Layers of black charcoal on the floor of the room suggest their frequent use; this back room was most probably a kitchen ancillary to ceremonies in the central room (A2) as well as helpful in cooking for the residents.

#### *IIIB.1. b. Units B1-B6 (sleeping rooms?)*

This unit comprises six rooms in an interior arrangement completely different from those of the other units. Not every room has independent walls. They were accessible from the large megaron through a doorway in the central room (A2). From there one first entered the small room B1, which offered no direct entrance from the central room into the others; room B2, more centrally located, seems to have provided communication between the rooms. Since the partition wall between rooms B2 and B3 had been destroyed nearly to floor level, no doorway here is obvious. A large vertical stone near the eastern end of this partition wall, however, offers an important clue to a doorway providing access to the eastern rooms. The width of the doorway here cannot be precisely established due to later rebuilding activities. None of these four rooms offer any conspicuous evidence of plastered floors. No entrance whatsoever into the small rectangular room B6 was apparent, and the eastern exterior walls of rooms B4 and B5 were found destroyed by the stone foundations of the later phase (in which they opened onto the exterior). Room B4, the largest of the three, displays a thin-walled, rectangular mudbrick interior feature – a bin-like cubicle which is limited from the south by a solid mudbrick platform or pilaster in the extreme SW corner of the room.

Interesting here in connection with these three rooms is the ‘L’-shaped corridor which runs northward from the doorways of B2 and B5 and then turns eastward along the southern wall of Unit E to provide an outside exit (Figs. 2, 3, 16). It was thus possible to proceed from the central room of the large megaron through two doors into room B2 and from there through this ‘L’-shaped corridor to an exit into the street to the east. The faces of the walls on either side of the northward running portion of the corridor are plastered. The fill in the corridor was a homogenous soft dark earth with mudbrick particles. That no noteworthy inner architectural features were found in these rooms brings to mind the possibility that they may have served as bedrooms.

#### *III B.1.c. Unit C*

This two-room unit widens towards its eastern façade. Both rooms are very large, built with their own independent walls. Inside the front room (C1) we encountered a disturbance covering a wide area, probably the same that destroyed the northern half of the façade. The preserved wall with a neatly finished end south of the entrance formed the

southern flank of the doorway here. Two post holes are irregularly positioned in the middle of the room.

An entrance on the central axis (like that in the façade) led over threshold stones from this room into a large interior chamber behind (C2: Figs. 2-3 and 10) that features a double wall in the west. In the front interior corners – to either side of the entrance – curving walls delineate two storage bins. Across the back of the room ran two more storage bins squarish in form, these with independent walls; at the center of their northern and southern walls were opposing niches, most probably for the ends of a beam. In both bins were found traces of wood as well as hollows left in the fill from two beams (one in each bin); the hollows ran diagonally through the fill, ending in horizontal traces towards the upper part of the deposit (Fig. 2). This would indicate that the beams had fallen in and been buried by rubble and subsequently broke into two.

The interiors of the walls in the spacious central room were found coated with soot subsequently covered with a yellowish plaster. In the northern half – between the bins were situated two rounded clay bins. To the level of the subsequent phase the room displayed a fill of homogenous soil mixed with much mudbrick debris fallen from the demolished walls. This unit – along with the two units D and E – most probably featured a second story or at least a mezzanine with a wooden floor. The extra walls around the interiors and the bins would have supported the wooden floor of the second story or balcony. One might picture a wooden staircase somewhere in the open area of room C2, perhaps on the right between the bins, leading up to the wooden floor of a second story, as reconstructed in Fig. 4).

### *III B.1.d. Unit D*

A small in-antis porch (recalling that of Unit A) formed the façade of Unit D, the interior plan of which greatly resembles that of Unit C. An earthen floor covered the entire porch and extended somewhat outward to the west, although it does not appear to have formed a ramp. A stone pavement was found preserved only in the southern portion of the porch. In the northern corner, there was an oven rather than a bin (Figs. 2 and 17). At the rear of the one long single room that opens onto the porch were two rectangular bins (D1a and 1b). The corridor-like storeroom D1c with seven pithoi *in situ* (Figs. 2-3, 18) and the cubicle at the north end of it ( D1d), both located behind the back wall of room D1 might have belonged to this unit, perhaps accessed through a doorway from the wooden floor on the level above. In the fill around the pithoi we recovered a few nearly complete vessels and other sherd material, indicating that the pithoi were not sunk deep into the earth. The mudbricks employed in the ‘U’-shaped construction at the south of D1c are darker in color than those used in the masonry of the walls surrounding it, characterizing it as a later addition.

### *III B.1.e. Unit E*

More than half of Unit E at the northwestern corner of Complex II protrudes beyond the basic rectangle formed by the complex. Its only entrance is from the street running along the east between Complex II and the rear of Complex I. The floor level is lower than that of the street outside; steps of flat stones were laid inside the doorway. The back half of

this one-room unit is comprised of four cubicles ( E1a-E1d) with independent walls. Cubicle E1d has a doorway opening from the eastern half of the single-room unit that did not boast double walls. It is likely that a staircase in this cubicle provided access to a wooden mezzanine-like floor (Figs. 2-4). Since there are no additional mudbrick walls inside, the second floor might have been built only above the bins in the eastern part.

### **III B.2. The Complex in Phase IV B**

Although the overall contours of the complex remained almost the same in this succeeding phase, some important changes took place in the interior arrangements indicative of the functions of certain units (Figs. 6-7). Furthermore, some doubts arise as to how much it still represents a single complex any more. Although it still stands as an independent structure, how closely interrelated were the interior arrangements – in other words the functions – of the units?

#### *III B.2.a. Unit A (The Large Megaron and Rooms A5 and A6)*

##### The Porch and the Front Room (A1)

The plan of the porch remained the same. A new ramp, however, was constructed, this time paved with small field stones that continued as far as the wooden threshold of the doorway (Figs. 6 and 19), with which a posthole discovered just to the right is related. The stone pavement again displayed some disturbance between the bins. No interior architectural features were encountered in the front room, and the side door the room C1 to the north was at some point walled up with stones and mudbrick. The staircase between rooms A1 and A2 most probably continued in use during this phase (Figs. 4 and 13).

##### The Central Room (A2)

In the central room, fill from this phase was preserved only in the eastern part. Along the interior, walls of mudbricks light gray in hue had now been constructed to support the wooden flooring, and at least two storage bins of similar bricks had also been installed (Figs. 6 and 20). Remnants of gray mudrick wall projecting from the SW onto the plate of the earlier oven here suggest the existence of the second bin restored at the west (A2b) and confirm that the oven had passed out of use when the bins were constructed.

The well preserved bin in the NE corner was found filled with ashy deposit. Both inside the bin and immediately to the north of it – where the earlier doorway had opened to the north into the center of the complex – we recovered a few nearly complete vessels. One is a beak-spouted jug with grooved chevrons typical of the EB II period. Of two lids found here, while one is a quite simple form with grooved decoration, the other is a high, cylindrical, typically “Trojan” form with two opposing holes on the flange (Efe 2007b, fig. 10b).

We postulate that the doorway into the room A5 (the B1 of phase IV C) shifted to the wooden floor level above, from which no remains have survived.

### The Back Room (A3)

Room A3 was rebuilt to extend somewhat further to the east, this time on sturdier stone foundations with larger stones employed in the lowest course of the the two exterior walls. A partition wall now divided the room into two equal parts, front and back; the door between them is located at the northern end of the partion wall (Figs. 6 and 11).

This back room revealed a plastered floor whitish in hue and a back wall painted red. At the center of the rear wall was a doorway, the floor of which was likewise plastered white; a garbage pit had unfortunately shaved away the exterior half of the wall here. Along the back wall ran a pavement comprised of two rows of flat stones, with a third row projecting further into the room only in front of the entrance. A small hearth was located toward the center of this back division, almost in line with the entrance.

### Rooms A5, B1 and B2

Unit B of the earlier phase had undergone significant alteration. The L-shaped corridor had been cancelled, and the eastern rooms along the exterior completely rebuilt, this time on stone foundations. The two rooms here (now B1 and B2) no longer opened into the complex, but directly outside through two doorways in the eastern wall; they now also communicated directly with one another through a narrow doorway in the partition wall. The two rooms had neatly plastered floors, and B1 to the south now featured a central hearth in line with the door.

B2 north of it now encorporated a long narrow bin or storeroom along its northern wall – with an entrance in the east. Clay-lined sockets for pithoi were discovered in the eastern part near the entrance. From the floors of these two rooms came *in situ* pottery, and artifacts of ground and chipped stone, as well as clay loom weights. It is likely that the two rooms functioned as workshops. Part of the floor of this phase in the SE corner of room B2 appears above the remains of Phase IVC in Fig. 16. The mudbrick wall between this corner and the doorway revealed traces of horizontal wooden planks (see Fig. 21).

As for the rooms A5 and A6 (the old B2 and B3), the partition wall between them was removed; while that between the old B1 and B2 probably remained in place, with the doorway possibly walled up like that between rooms A2 and A5. A5, as mentioned above, was probably accessible only from the central room of the large Megaron (A2) over a hypothetical wooden floor level above the bin in the NE corner of the room. The long room A6 that had been constructed with walls of its own might also have served as a light-well.

### III B.2.b. Unit C

The overall plan of Unit C remained the same although the room C2 underwent considerable alteration. First of all, the doorway shifted slightly to the north, the earlier entrance walled up with stones. All the bins were removed and one large central hearth installed. It dominates the room, accompanied only by an ash pit behind it. The pit, half of which was found disturbed, was lined with a thin layer of mudbrick (Figs. 6 and 22).



### III B.2.c. Unit D

The major alteration to Unit D in phase IVB took place at the front of the unit, where the porch was cancelled and replaced by another room in front of D1. This new room was built of red mudbrick without stone foundations. The entrance was near the SW corner of the façade. The new front room (D2) revealed a plastered floor with several *in situ* finds on it. While only a concentration of stones was found in the south, the plate for an oven was encountered in the NE corner of the room, overlapping the earlier one on the porch of phase IVC. The interior arrangement of the room behind (D1) and the magazine (D1c) and small bin (D1d) at the back most probably remained the same.

### III B.2.d. Unit E

Likewise, the basic plan of Unit E also remained the same. The doorway onto the street to the east shifted slightly northward. In this phase there was no doorway into cubicle E1d, where three clay-lined sockets for pithoi were discovered. The pithoi within them had been severely damaged. The addition of an interior mudbrick wall surrounding the front of room E1, suggests that the entire unit now had a second story.

The *in situ* finds in certain rooms of this phase might be interpreted as a clue that the complex fell victim to an earthquake. Immediately above the south wall of bin E1d from the “final” phase of Complex II, we excavated a red mudbrick wall. The finds coming from the undisturbed deposit in the immediate surroundings make it possible to date the red wall to the very end phase of the EB II (Phase IV A) that we define as “transitional into the EB III.” This of course, is not nearly enough to claim to say that another complex had been rebuilt here in that transitional phase, but it does leave the possibility open.

## IV. DATING OF COMPLEX II

The context of the red mudbrick wall mentioned immediately above constitutes a *terminus ante quem* for the phases IVB and IVC of Complex II that are the subject of this article.

The transitional phase IV A has been already well documented in Grids AA17, AB 17 and AD 18. In this final EB II phase one can trace certain of the earliest EB III characteristics: incipient examples of Red Coated Ware and hand-made Trojan plates (both in limited number), for example, as well as one-handled tankards and tripod cooking pots.<sup>7</sup> Some of the plates may even represent early wheel-thrown specimens. It is a horizon that can be best paralleled with the “Burnt Level” at Seyitömer<sup>8</sup> and with Beycesultan XIIIa.<sup>9</sup> Similarities between some of the pottery recovered in phases IV C and IV B of Complex II and that of Beycesultan XIV- XIII b-c further support this correlation.<sup>10</sup>

<sup>7</sup> Efe 2007b.

<sup>8</sup> Efe 1998; Çakalgöz 2000.

<sup>9</sup> See Lloyd-Mellaart 1962, pp. 177, 179 with fig. P.46:1-6.

<sup>10</sup> The pottery of Complex II will be treated in a separate article.



Similar innovations in pottery paralleling those of Küllüoba IV A and Beycesultan XIIIa can also be traced in Phase V:3 at Karataş-Semayük,<sup>11</sup> such as the early appearance of one-handled tankards and the wheelmade Trojan plates (again few in number). Mellink has already characterized this horizon as “transitional” into the EB III.<sup>12</sup>

A tentative stratigraphical chart of Küllüoba with calibrated C-14 dates<sup>13</sup> for certain EBA phases at Küllüoba is given below in Figure 8. These dates seem to correspond well with the absolute dates for the Demircihüyük EBA levels as well as with the general chronological scheme of western Anatolia as a whole. The sample of charred grain from Phase IV C comes from the bin (A2a) in the central room of the Large Megaron.

## V. CONCLUSIONS

Complex II was most probably first built at least as early as the beginning of the EB II period. In the early phases it might have been only a row of houses that gradually developed – with renovations and additions – into a complex. The Large Megaron (Unit A) was eventually added – and it was probably with this addition that the building first took on the character of a “complex.” Here, the upper two phases of the Complex (IVC and IVB) – those architecturally best known – have been introduced, exploring first of all the probable functions and interrelations of different units according to the interior features and layout of the complex, then the finds and contexts discovered in the rooms and finally, its place and significance both within the settlement and within the development of the Early Bronze Age of western Anatolia.

What can we now say about these two uppermost phases of Complex II? According to the ceramic evidence, we have seen that Küllüoba phase IV A – “transitional into the EB III” forms *a terminus ante quem* for the complex.

As far as the internal organization is concerned, that of Phase IVC is by far the most impressive and easiest to interpret. The large megaron (Unit A) with its monumental length, its impressive western façade and its spacious central room with an elevated hearth seems to mark the the most important aspect of the complex. The front room is connected by a doorway to the front room of Unit C; accordingly Unit C must have been vital to the large megaron, and considering the direct traffic inbetween, it must have been open to the public. The central room, however, was more secluded: out of sight – accessed by climbing a staircase between the two partition walls that took one in a zigzag. From here one doorway opened into a back room and the other into Unit B, where an ‘L’-shaped corridor led to an auxillary exit from the complex, very likely an emergency exit in case of fire or natural disasters such as earthquakes rather than as daily-life usage. Otherwise people would have to go all the way down to the front door of the megaron to escape.

<sup>11</sup> See Warner 1994, p. 9 with pl. 175:d.

<sup>12</sup> See Mellink 1986, pp 144ff with pl.16.

<sup>13</sup> Some of the C-14 samples from Küllüoba have been analyzed by Dr. Shin Atsumi at the National Institute for Environmental Studies in Tokyo. Our thanks go to him and to Dr. Sachihiro Omura who arranged for this.

We may assume that the central room with its large hearth represented the administrative and ceremonial core of the complex. The back room with an oven in the NW corner and a hearth east of center, would in this phase, then, have been the kitchen of the complex which opens directly onto the central room A2. (The two kitchens excavated north of the East Gate opposite Complex I featured both ovens and hearths as well.)

Unit B, at the “back” of the complex, might well have provided sleeping space; this would explain the almost complete absence of interior architectural features.) Thus, the rooms of Unit B form a unit that must have remained closed off to the public, but allowing private entry and exit through the back door at the end of the ‘L’-shaped corridor.

The remaining three units with separate entrances from outside (D, E, and room C2 in Unit C) might all have functioned basically as storerooms. The extra mudbrick walls around the interiors of the rooms and the bins would have supported an upper story. A wooden staircase inside the entrance could have provided access to a wooden floor above. The door between the rooms A1 and C1 seems to demonstrate a somewhat closer relationship between the units A and C. Only the units D and E are totally dependent upon access from outside. It is possible that different goods were stored in each of these units, some of which might have included more valuable commercial wares.

Complex II as finally rebuilt in phase IV B witnesses significant alteration. Inside the central room (A2) of the large megaron, mudbrick walls to support the wooden floor of a second story and at least two bins were built. The back room (A3) was divided into two by a partition wall and it had access to the outside through a door in the back wall, as now did the other rooms facing east (B1 and B2 of this phase).

On the other hand, the interior arrangement of the back room in Unit C (C2) has changed completely: the storage bins had disappeared and a single central hearth now dominates the room. It would seem that in this phase the room C2 had taken over the ceremonial role earlier played by the central room in the large megaron (A2). The doorway between A1 and C1 had been walled up.

Unit B had been completely rearranged. The three eastern rooms were rebuilt, they now stood as two rooms on stone foundations accessible only through doorways onto the street east of the complex – although directly connected to one another by a narrow doorway. There was now a hearth in B1, and from both rooms came a good number of *in situ* finds. Perhaps they now served as workshops. The partition wall between the centrally located earlier rooms B2 and B3 was cancelled, leaving a long trapezoidal space that might have functioned only as a light-well rather than a room.

Units D and E must have continued in use as storerooms. Unit D now has a front room, in which a hearth and some *in situ* material was found. The room D1 might therefore have also been used as a kitchen.

In this final phase, each unit seems to have become more independent – with an entrance of its own, an observation that can also be made of Complex I in its contemporary final phase. Although in this state of research it is perhaps too early to make such a claim, but it does seem as if the complexes have lost their “complex” character.

The position of Complex II in the settlement, its size and interior articulation (most particularly in phase IV C) suggest that it might have functioned as a palace or an

administrative building, if very modest in terms of its Mesopotamian counterparts. A well preserved flat axe of copper or bronze set as a votive in the southern mudbrick wall of Unit C may very well be taken as an indication of the importance of the complex. Its duration coincides with an increase in surplus production (as reflected in the number and capacity of storage space), the first intensification of long-distance trade, and finally – as a result – the emergence of trade centers possibly controlled by feudal *aghas* gradually becoming rich and prosperous. The emergence of an enclosed upper town with administrative buildings such as Complexes I and II at Külliöba should represent the organization and protection of wealth controlled by the settlement and an increase in the needs and necessities felt by the gradually emerging elite.

From the mid-third millennium onward settlements in various geographical regions of western Anatolia, such as Külliöba, certain northern Aegean sites (Thermi, Troy and Poliochni) and possibly Beycesultan and Tarsus as well begin to display a linear type of settlement plan. The North Aegean houses (Troy IIg and Poliochni V) are now often comprised megaron-like structures with lateral rooms on one or both sides. According to R. Naumann, this is one indicator of important cultural change at Troy and Poliochni.<sup>14</sup> Such houses are very similar in concept to the houses and complexes at Külliöba. Because the development of this house plan type can be traced back as early as the EB I period at Külliöba, it seems only plausible to consider whether it might not have been introduced to the eastern North Aegean from the Anatolian mainland along with other cultural elements, parallel to the hypothetical emergence of a “Great Caravan Route”<sup>15</sup> between Cilicia and the North Aegean.

Although we still have a long way to go before we are able to present a detailed overview of the Külliöba EBA architecture, Complex II as introduced here reveals tangible evidence of the prevailing architectural plans as well as of the existence of public buildings in settlements as early as the beginning of the EB II period. The complex consequently urges us to rethink our evaluation of the initial stages of urbanism in Western Anatolia and the Aegean realm.

<sup>14</sup> Naumann 1985, p. 351 with fig. 452.

<sup>15</sup> See Efe 2003b and Efe 2007b, 17a.

## APPENDIX: THE ANIMAL BONES FROM COMPLEX II AT KÜLLÜOBA

Can Y. Gündem<sup>16</sup>

This appendix deals with the animal bones recovered during the excavation of Complex II at the site of Küllüoba near Seyitgazi in the Province of Eskişehir, Turkey. The location of the complex in the fortified upper city of an EB II settlement on a large mound, its layout as a freestanding “island” of contiguous buildings standing independent from the row-houses of the community, and its impressive architecture that includes a large megaron have suggested to the excavators that it might represent a religious and/or administrative complex dating as early as the Early Bronze II period. The main aim of this study is to determine whether the diet reflected by finds from within the complex shows any differentiation from that reflected by finds from the contemporary EB II settlement<sup>17</sup> as a whole.

Over 750 bone samples from Complex II were therefore studied and fed into the computer database during the 2005 excavation campaign at the site. The author has been working on bone material from the site since the beginning of the 2000 season in preparation for his master thesis.<sup>18</sup>

The bone remains were first identified according to species and counted to calculate their representative proportion among the livestock kept or handled in Complex II. The identified skeletal parts were registered in the computer programs<sup>19</sup> with details of any burning or cut marks that might offer information on further processes undertaken following the slaughter of the animal.

As aging-graphics reflect the aims of breeding domestic animals, the ages of mortality for the mammals were determined based on standard fusing periods for the joints and the degree of wear on dental remains.

The individual bone remains from each identified species were weighed in order to calculate the rate of consumption of the various species by the populace. Indeed, a cow and a sheep have the same number of bones; however, a single cow would deliver as much meat as four to five sheep. All suitably identifiable bone remains were measured to

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<sup>17</sup> Because very little bone material from EB III levels at Küllüoba has yet been collected, the EB II and III materials have been considered together in this paper.

<sup>18</sup> H.-P. Ürpmann and M. Ürpmann have visited the excavation and worked on the material as well.

<sup>19</sup> The program KNOINPUT© (created in the seventies and still under development by H-P. Ürpmann) has been used to computerize these results). The input data have been evaluated with the aid of KNOCOD programs, for example formulation of the species list and data on aging. The approximate size of the animals was calculated with the logarithmic size index (LSI) and the results displayed in “box & whiskers” diagrams, a method used to compare any given species with the “standard animal” (usually a recent measured skeletal to insure that the size of the same species from all different settlement periods can be meaningfully compared with each other as well as with samples from all periods at other sites). – What is LSI? Normally only the same bones may be compared (e.g. radius with radius or femur with femur). LSI provides a comparison of different skeletal elements with each species, (thus allowing, e.g. comparisons of a radius with a femur) and greatly increasing correlations among comparable bones. The standard animal is needed for the calculation of LSI that is based upon a complete skeleton. The LSI is calculated according to the following formula:  $LSI = \log x - \log m$ ; when x is the measure of the archaeological bone fragment and m corresponds to measurement of the standard individual.

observe the size and development of the animals, which might reflect the aims of breeding as well as possible changes among the domesticated animals.

### **The material**

Among the identified remains we see a definite preponderance of mammals. Remains of birds and shellfish (non-mammals in general) were very low in number. To be sure, not all of the mammal remains could be securely identified by species; characteristic elements do not appear on all fragments and much of the material is simply too fragmentary to determine the species or even the size of the bone. Thus the unidentified mammal remains constitute ca. 17% of the entire number of mammal bones identified (NIS),<sup>20</sup> but only 6.6 % of their entire weight (WIS)<sup>21</sup> as shown in Table 1.

The unidentified bones as well were classified according to their original size. Only medium and large mammal-sized animal remains were found in the bone assemblage of Complex II.

Two-thirds of the unidentified bone weight remains are recorded as originating from medium-sized animals such as sheep, goat or wild sheep. The remainder of the unidentified bones comes from the large mammal-sized group (cattle, equidae or large carnivores). The weight of the unidentified mammal remains is split almost equally between these two groups (see Table 1).

Ninety percent of the identified remains from Complex II come from domestic animals, and that makes up as well ca. 90% of the total weight of the identified remains. Thus wild animal remains make up only ca. 6% of the number of identified species (NIS) and ca. 7% of the weight of the identified species (WIS). The rest belong in the categories of “domestic or wild” animals<sup>22</sup> and non-mammal remains<sup>23</sup> (Fig. 23).

### **Domestic animals**

Five domestic species were definitely identified among the material from Complex II. Small ruminants make up the largest group among the domestic animals, followed by cattle. Slightly over half the identified domestic animal remains comes from small ruminants, while cattle make up ca. 1/3 of the total number of identified domestic species. The pig is in third place with 15%, with dog bones accounting for only three percent of the identified domestic animal remains. By weight, however, 53% of the bone comes from cattle and only one-fourth from small ruminants. One fifth of the weight is from pig (ca. 17%) and dog (ca. 4%) bones (Fig. 24).

Remains from small ruminants represent half of the identified domestic animals, as we have seen above. However, only a very small percentage could be certainly

<sup>20</sup> Number of identified species.

<sup>21</sup> Weight of identified species.

<sup>22</sup> Remains of fauna that cannot be securely identified as domestic or wild.

<sup>23</sup> These two groups lie outside the scope of this article.

identified as sheep and goats.<sup>24</sup> The rest of the small ruminants' remains were entered into computer simply as OVIS/CAPRA.<sup>25</sup>

OVIS/CAPRA, unidentified small ruminant remains, are unquestionably large in number, but indeed the "OVIS/CAPRA" material does not imply any *specific animal species*. To arrive at a clearer picture of the domestic animal ratios, the author has this time employed for the calculations only those remains clearly identified either as sheep or as goat (Fig. 25).

After the new calculations, the numerical representation of the domestic animals has changed. Now, best represented among the remains identified as domestic animals would appear to be sheep (38.5%), followed by cattle (30.4%), pig (15.4%), goat (12.6%) and dog (3.2%). Nevertheless, cattle (53.6%) remain the heaviest group, followed this time by pig (17.3%), sheep (16.5%), goat (8.8%) and dog (3.8%) (Fig. 25).

There is not enough evidence from Complex II to work out any killing pattern for the domestic animals. However, one might roughly estimate that 75% of the cattle herd survived to two years of age, some even maturing past the age of two-and-a-half.<sup>26</sup>

One fifth of the small ruminants<sup>27</sup> on the other hand, were slaughtered before they even reached their fifth month; altogether, what therefore amounts to one-third of the flock would already have been culled before reaching one year of age.

Pigs were killed while still quite young. Only about a third of the piglets survived their first year, and only six percent survived longer than three and a half years. Only one animal older than five years was identified among the pig assemblage.

Among the material from Complex II, bones from only 15 sheep were suitable for measuring.<sup>28</sup> The average size of the sheep appears to have been nearly identical to the standard animal, a wild female sheep (*ovis orientalis*). There were larger and smaller individuals in the flock as well. The larger ones should have been rams and wethers (Fig. 26).

The average size of the cattle among the Complex II material was again quite similar to that of the standard animal, a cow from the United Arab Emirates, 1.20 m high at the shoulder. Thus there were both smaller and larger individuals. Those surpassing the standard should have been bulls or oxen (Fig. 27).

The size of the measured remains indicates that dogs were smaller than the standard animal, the Arabian Wolf. However, some of the individuals *almost* measured up to par<sup>29</sup> (Fig. 28).

<sup>24</sup> Sheep remains were identified three times more frequently than goat remains and weigh about twice as much as the goat remains.

<sup>25</sup> Because the distinguishing criteria were non-existent or severely damaged on the sample. The fragments from unidentified "small domestic ruminants" were registered in the databank as OVIS/CAPRA in order to avoid the misleading conclusions.

<sup>26</sup> With help of the known epiphyseal fusion periods for cattle.

<sup>27</sup> The individual data on the epiphyseal fusion periods of sheep and goat were too few to produce a meaningful result. Therefore here they were calculated together.

<sup>28</sup> The number of the measured goat and pig remains were not sufficient for a box & whiskers diagram.

<sup>29</sup> The Arabian Wolf is markedly clearly smaller than its relatives in the northern reaches of the world.

## The wild animal spectrum from Complex II

Approximately seven percent of the NIS and WIS come from wild animals. Four species were securely identified, while other probably wild samples could not be further classified<sup>30</sup> (see Table 1).

The securely identified wild animal remains come from hare, red fox, fallow deer and wild sheep. Best represented among the game animals are fallow deer, with the red fox taking second place. The Equidae remains could be either wild horse or *Equus hydruntinus*.<sup>31</sup>

However, one equidae metacarpus (MC III) measured indicates that it may represent a donkey (breadth of distal end Bd=37.0 mm). This sample may represent one of the oldest domestic donkeys in the highlands of northwestern Anatolia.

## Meat consumption among of the Complex II people and the rest of the population

It was usually domestic animals that were culled to cook in the kitchens of Complex II, whereby game was served only from time to time. Sheep were the animals most frequently slaughtered by the butchers of Complex II, followed by cattle, pig and goat.

However, it was the size of the cattle rather than the number slaughtered that defined them as the primary meat supplier in the residence. Pigs would appear to have been the second-largest source of meat, followed in turn by sheep. Goat does not seem to have been particularly popular in Complex II.

More than half the red-meat demand was met by beef. Actually, a fair quantity of pork and lamb were consumed as well; together they covered more than a third of the red-meat demand.

Piglets and young small ruminants were culled for slaughtering and eaten. One-third of the small ruminants had already been killed before they reached one year of age, and only one third of the pigs matured beyond a year. The people were more patient and prudent with their beef; cattle were slaughtered when the fodder consumption and the weight of the animal stood in an optimal relationship.

The people fed by the kitchens of Complex II consumed goat meat only in a relatively small percentage. A few bones from dogs reveal cut marks from the butcher's knife, indicating that they were occasionally slaughtered and eaten – if only a superficial contribution to the meat demand.

Among the game animals, only fallow deer seems to have been popular. The deer were hunted and brought to Complex II to be prepared and cooked. This may well have represented a banquet celebrating the tradition of the hunt, with hunters and others of a certain milieu consuming the game or in honor of a special public occasion.

Inhabitants of the settlement in general clearly consumed more lamb than the residents in Complex II, who seemed to have balanced this lack of red meat with goat

<sup>30</sup> Certain rodent, cervidae and equidae remains could not be further classified.

<sup>31</sup> In this region it is possible to find both these types over various periods. They have been identified in a Chalcolithic settlement at Orman Fidanligi and in the Early Bronze Age settlement at Demircihüyük. *E. hydruntinus* remains are still the only securely identified equidae from Külliöba.



meat, a possible indication that goat meat was considerable more visible on the menu of the ruling class. Both groups consumed beef and pork at approximately the same rate, and cattle represented the principal meat supplier of both groups.

The size difference between the sheep remains found in Complex II and those from the settlement outside would indicate that the ruling class was consuming bigger and fleshier sheep; perhaps the general population did not even keep such big sheep as the ruling class. It clearly suggests that more rams than ewes were cooked in the kitchens of the complex<sup>32</sup> (Fig. 4). The size of the cattle, however, displayed no such variation (Fig. 27).

Dogs from the rest of the site were clearly larger than the dogs in Complex II. Some dogs from the settlement were almost as big – or bigger – than the Arabian Wolf (Fig. 28).

The wild animal spectrum from Complex II is clearly more limited than that of the settlement in general, even though the people from the complex seem to have hunted more than the regular populace. (NIS = ca. 7% within Complex II and ca. 3% among the EBA II/III population in general.)<sup>33</sup>

The ruling class might have had more time to hunt, or perhaps this was privilege restricted to the upper class; it might have been a social activity among the “upper city” people. Another possibility is that the city administration demanded their share of all game hunted as a bounty, but had that been the case, the wild animal spectrum of Complex II should have mirrored that of the EBA II/III folk.

## Conclusion

Indeed there was no great difference between the diets of those within the complex and those without. In both, cattle were the principal supplier of red meat, and sheep were the animals most often slaughtered – whereby, the most striking difference was the size of the culled sheep; the ruling class ate larger and fleshier sheep than the rest of the population, which could be interpreted as a special status of the lamb on the menu.

A second discrepancy exists in the variety of game consumed; the list of game animals from Complex II was by no means as colorful as that of the rest of the settlement. It cannot be said that the common folk did not go hunting as much as the upper class; they hunted and brought home a greater variety of wild fare than appeared in Complex II.

One interesting point is that the dogs kept in Complex II were smaller than the others. This may represent human selection. The Complex II dogs were kept as guard dogs or pets, whereas the other dogs were mostly sheepdogs; larger and stronger dogs were needed to defend the herds and fight off predators such as wolves when the animals were taken to pasture or went astray.

A point to follow up is the significance of fallow deer remains in Anatolian settlements. These animals might well have played a special role among the prehistoric populations, representing more than just game. Fallow deer might have been part of a cult

<sup>32</sup> A most appropriate question here is whether the ruler class was perhaps raising a different race of sheep.

<sup>33</sup> C.Y. Gündem, unpublished masters thesis.



– a sacrifice during cultic ritual.<sup>34</sup> Even though no evidence of such a cult building has yet been found at Küllüoba, such sacrifices may have taken place in open areas or outside the settlement.

<b>TAXA</b>	<b>N</b>	<b>N%</b>	<b>W</b>	<b>W%</b>
Cattle, <i>Bos</i>	172	27,6	4259,5	49,1
Sheep, <i>Ovis</i>	24	3,8	421	4,9
Goat, <i>Capra</i>	8	1,3	227,4	2,6
Sheep or Goat, <i>Capra/Ovis</i>	257	41,2	1360,7	15,7
Pig, <i>Sus</i>	87	13,9	1373,7	15,8
Dog, <i>Canis</i>	18	2,9	303	3,5
<i>Domestic animals total</i>	<i>566</i>	<i>90,7</i>	<i>7945,3</i>	<i>91,7</i>
Wild or Domestic Sheep	2	0,3	32,5	0,4
Wild or Domestic Sheep/Goat	2	0,3	24,9	0,3
Wild or Domestic Pig	1	0,2	26	0,3
Canidae indet.	1	0,2	1	0
<i>Domestic or Wild animals total</i>	<i>6</i>	<i>1</i>	<i>84,4</i>	<i>1</i>
Rodentia unidentified, small	6	1	7,6	0,1
Hare, <i>Lepus capensis/europaeus</i>	2	0,3	5,4	0,1
Red Fox, <i>Vulpes vulpes</i>	13	2,1	111,9	1,3
Fallow Deer, <i>Dama dama</i>	15	2,4	244,2	2,8
Cervidae unidentified	3	0,5	123,9	1,4
Wild Sheep, <i>Ovis orientalis</i>	1	0,2	26	0,3
Equidae unidentified	2	0,3	81	0,9
<i>Wild animals total</i>	<i>42</i>	<i>6,8</i>	<i>600</i>	<i>6,9</i>
Non Mammals	14	2,4	49,5	0,5
unidentified, medium to large	86	66,2	256,7	44,3
unidentified, large	44	33,8	323	55,7
<i>Unidentified total</i>	<i>130</i>	<i>100</i>	<i>579,7</i>	<i>100</i>
Portion identified	624	82,8	8667,2	93,7
Portion unidentified	130	17,2	579,7	6,3
<b>Total</b>	<b>754</b>	<b>100</b>	<b>9246,9</b>	<b>100</b>

Table 1. Species list of Küllüoba Complex II.

<sup>34</sup> Fallow deer may have been sacrificed in cultic ceremonies in the open during the Trojan Maritime Culture cultic areas, particularly following the Troia I period (Gündem, in preparation).

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Fig. 1. The general layout of the EB II settlement (Phases V F through IV B).

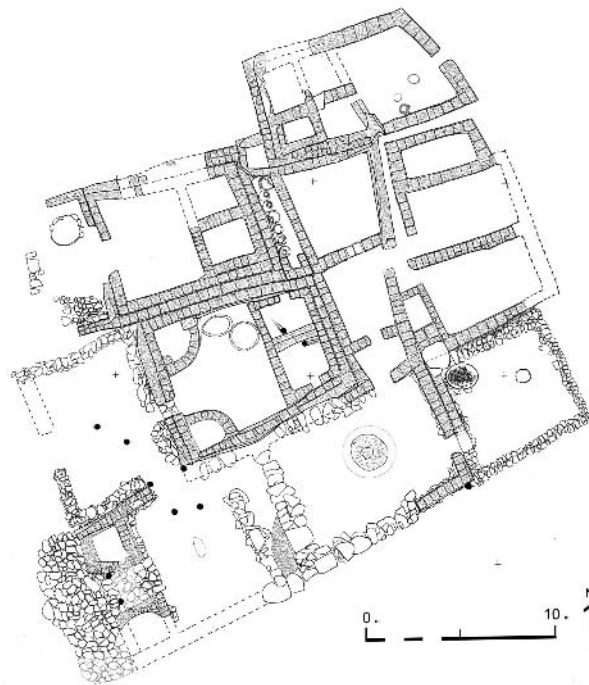


Fig. 2. Complex II as renovated in Phase IV C; state plan.

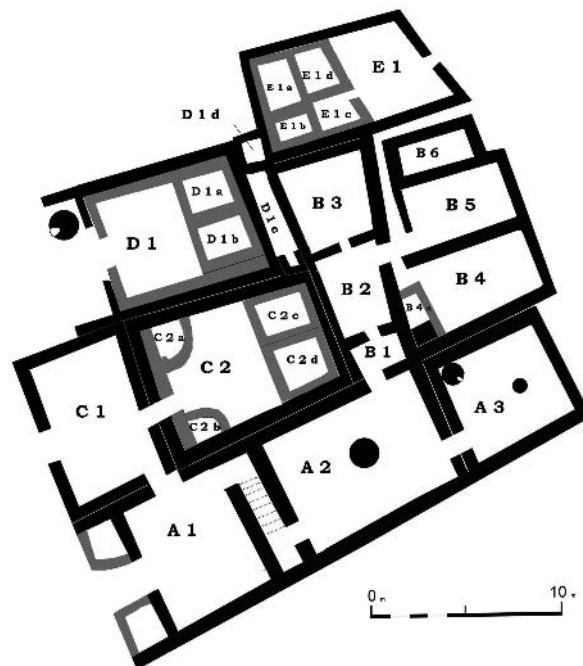


Fig. 3. Simplified plan of Complex II (phase IV C).

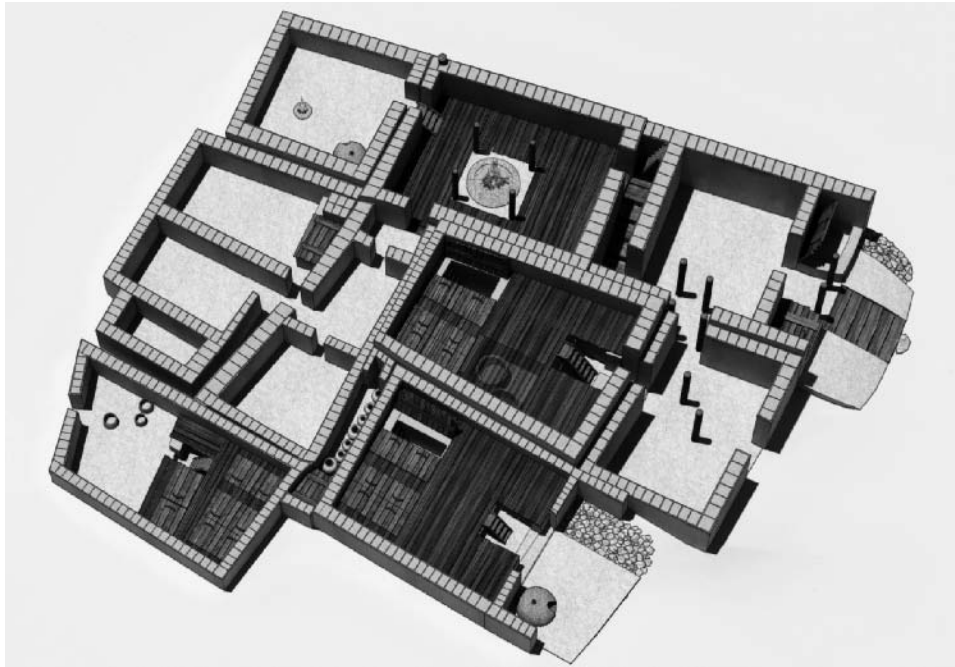


Fig. 4. Isometric reconstruction of Complex II (Phase IVC).



Fig. 5. Reconstruction of the façade of the Large Megaron A1.

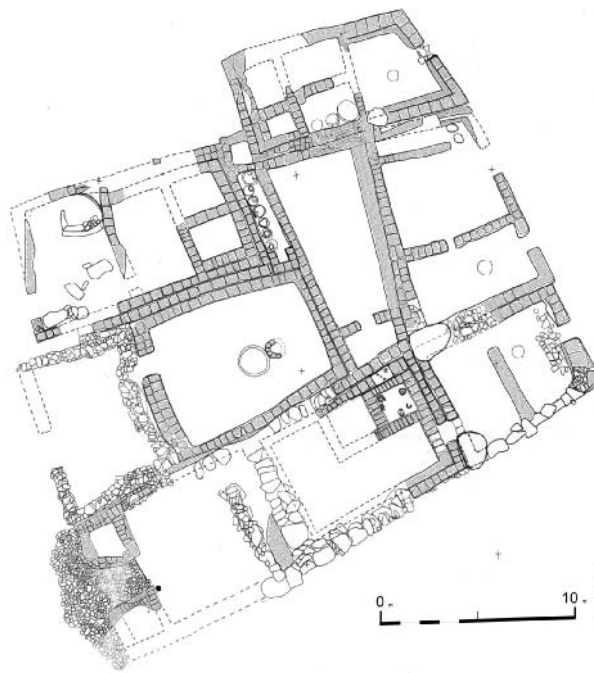


Fig. 6. The final phase of Complex II (Phase IV B); state plan.

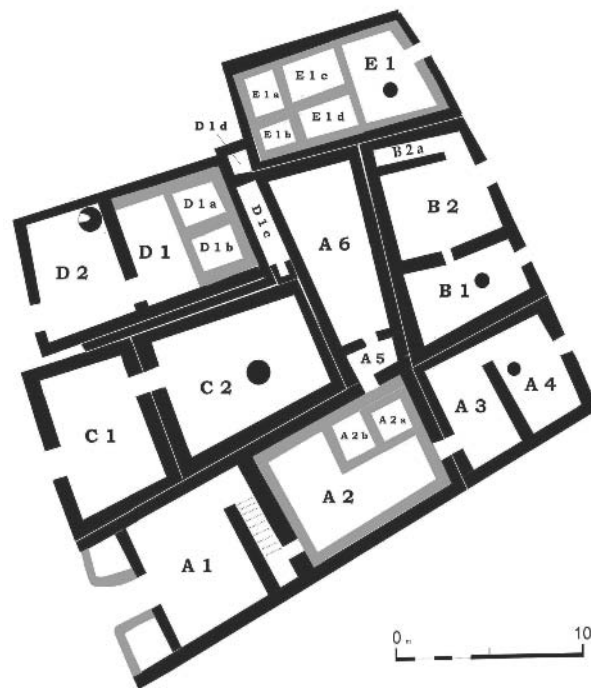


Fig. 7. Schematic plan of Complex II (Phase IV B).



<u>The periods</u>	<u>Eastern Sector</u>	<u>Western Trenches</u>	<u>Calibrated C-14 dates</u>
<u>Islamic burials</u>	<b>I A</b>		
<u>Classical periods</u>	<b>I B</b>		
<u>Late EB III</u>	<b>II A</b> <b>II B</b> <b>II C</b> <b>II D</b>		<b>2044-1937 BC</b>
<u>Early EB III</u>	<b>III A</b> <b>III B</b> <b>III C</b>		<b>2314-2197 BC</b>
<u>EB II</u>	<b>Complex II</b> <b>IV A</b> <b>IV B</b> <b>IV C</b> <b>IV D</b> <b>IV E</b> <b>IV F</b> <b>IV G</b>		<b>2603-2487 BC</b>
		<b>1</b>	
<u>EB I</u>		<b>2</b> <b>3</b>	<b>2862-2809 BC</b>
<u>Transitional Period into the EBA</u>		<b>4</b> <b>5</b>	
<u>Late Chalcolithic</u>		<b>6</b>	

Fig. 8. The position of Complex II phases IV D-IV A in the tentative stratigraphical chart of Külliüoba.



Fig. 9. Complex II from the northeast.



Fig. 10. The southern part of Complex II from the west.





Fig. 11. Complex II from the south.

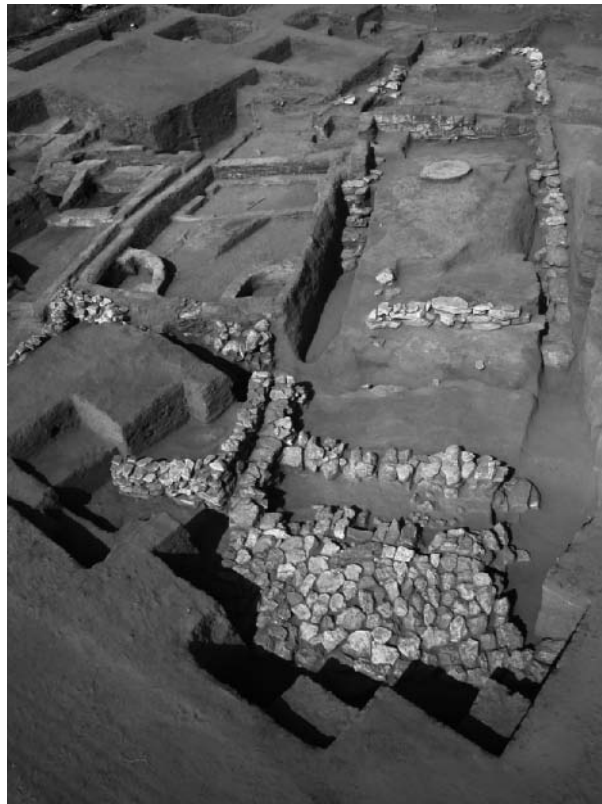


Fig. 12. The southern part of Complex II from the west.



Fig. 13. The parallel partition walls with what remains of the sterile earth fill.



Fig. 14. Remnants of a horizontal plank between the stone foundation and the mudbrick masonry with the hollow from the head of a perpendicular beam immediately above; eastern wall of the central room.



Fig. 15. Stones protruding from the foundations into the interior of the central room; Unit 2.

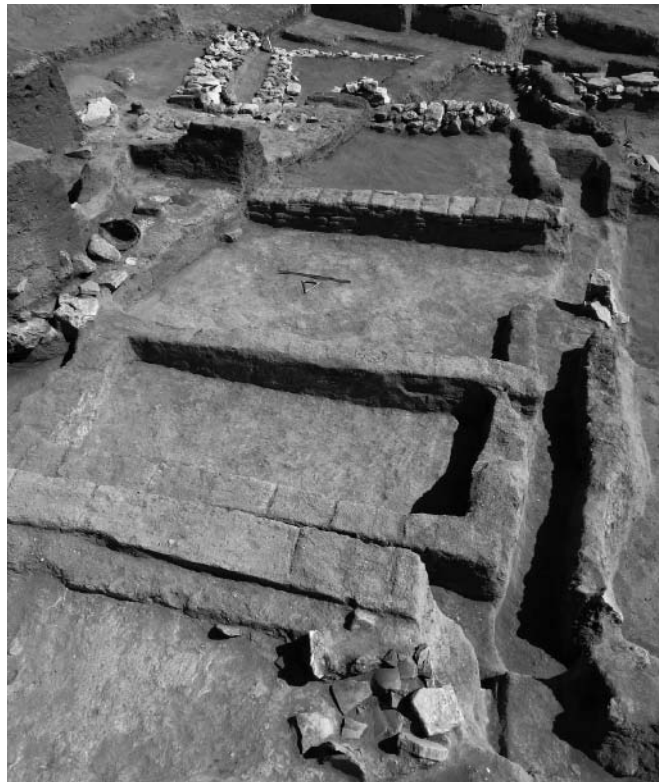


Fig. 16. Units B4-B6, part of the L-shaped corridor, and the SE corner of Unit B5 (phase IV B); from the north.





Fig. 17. Oven floor on the porch of Unit D; from the west.



Fig. 18. The storeroom (D1c) with seven pithoi in situ.



Fig. 19. The stone cobbling in the upper phase of the entrance to the large megaron (Phase IV B).



Fig. 20. The bin in the central room of the megaron and to the right, the hearth of the lower phase (IVC).

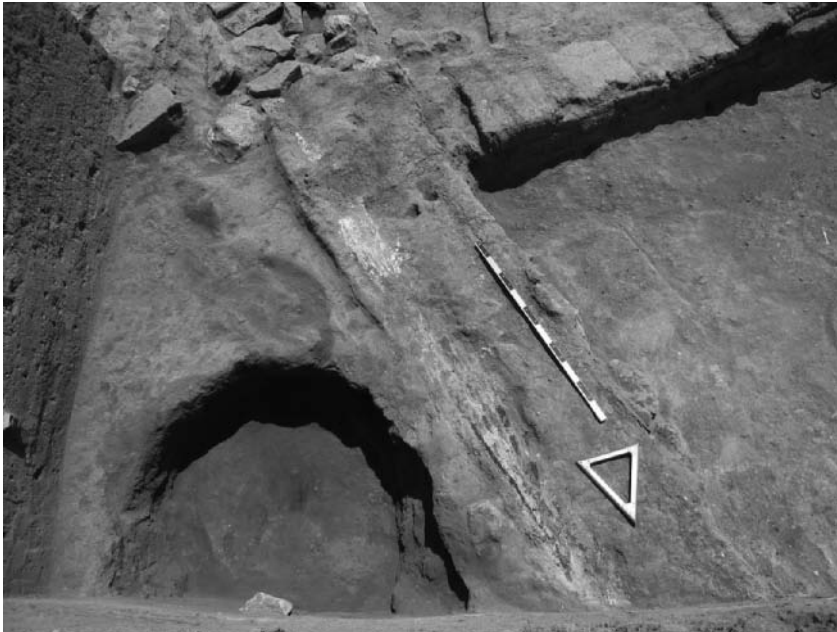


Fig. 21. Eastern wall of the central room in the large megaron (Unit B2); remnants of wood between the foundations and the mudbrick masonry.



Fig. 22. Unit C2; the hearth and part of the ash pit from Phase IVB.

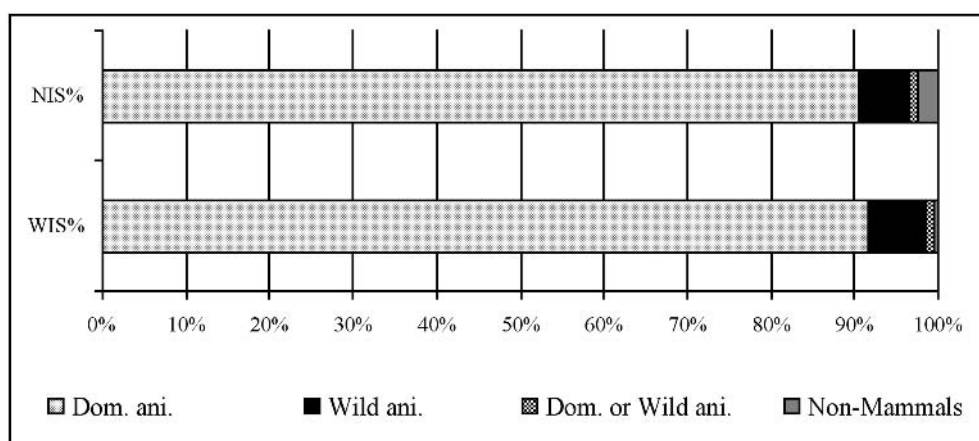


Fig. 23. Distribution of the main identified mammal groups in the bone assemblage.

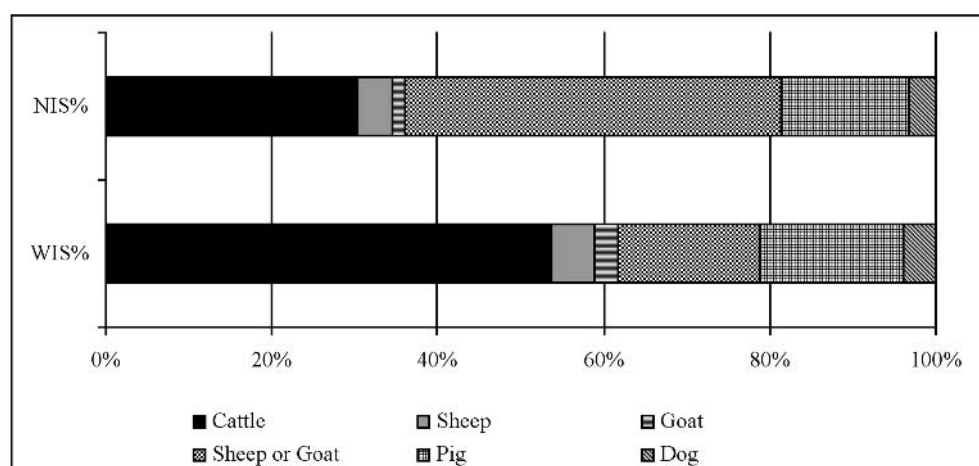


Fig. 24. The distribution of domestic species among the animals identified in Complex II.

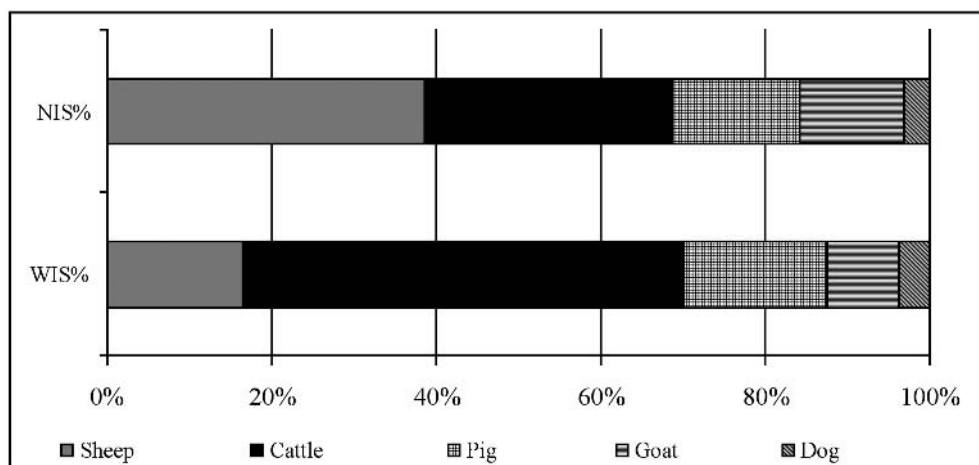


Fig. 25. The distribution of domestic animal remains among the identified domestic animals in Complex II after the new calculations.



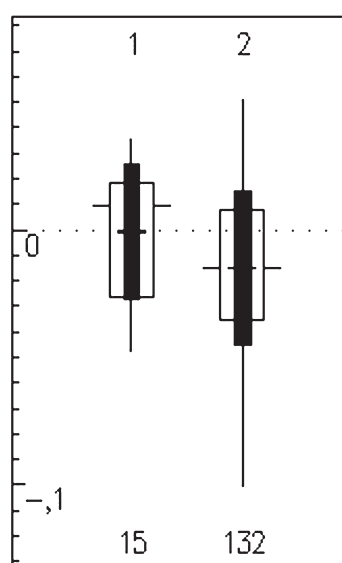


Fig. 26. Size of the sheep in Complex II (1) and in the rest of the EB II/III settlement (2).

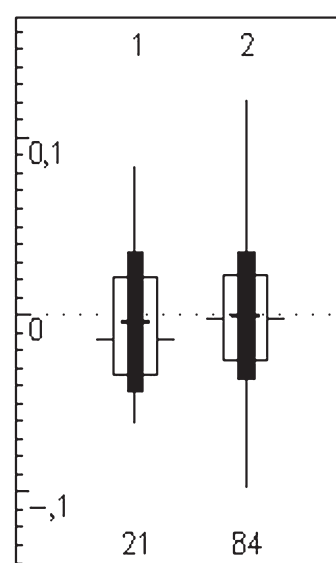


Fig. 27. Size of the cattle in Complex II (1) and in the rest of the EB II/III settlement (2).

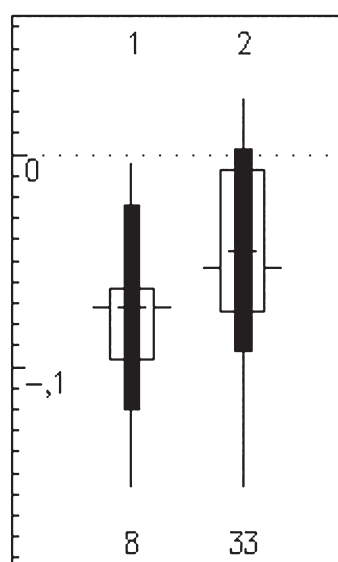


Fig. 28. Size of the dog in Complex II (1) and in the rest of the Early Bronze Age II/III settlement (2).



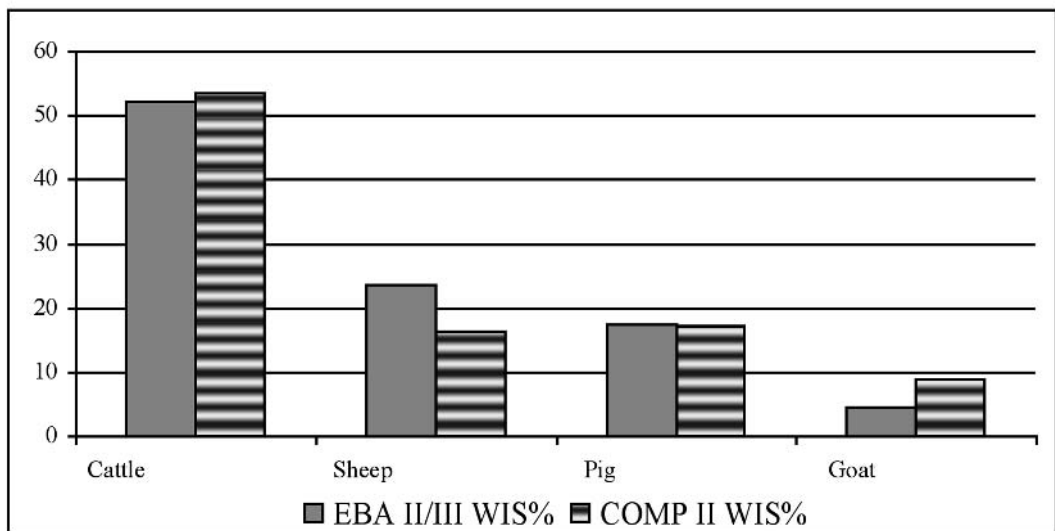


Fig. 29. The distribution of main domestic animal remains in WIS% among the identified domestic animals in Complex II and the rest of the Early Bronze Age II/III.

## PRELIMINARY REPORT FROM THE 2005–2006 FIELD SEASONS AT KENAN TEPE\*

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Dave Hopwood, Andrew Creekmore, Arzu Demirergi and Melissa Eppihimer<sup>1</sup>*

### Introduction

During the summers of 2005 and 2006, members of the Upper Tigris Archaeological Research Project (UTARP) undertook a sixth and seventh season of archaeological fieldwork at the site of Kenan Tepe in the Upper Tigris River region of southeastern Turkey.<sup>2</sup> The 2005 field season took place between May 13 and July 4, 2005.<sup>3</sup> The 2006 field season took place between June 1 and June 30, 2006.<sup>4</sup> In archaeological terms these two seasons were perhaps our most productive and interesting seasons yet. During the 2005 season we excavated two superimposed structures, found part of a third structure and carefully sampled several outside work areas from the Ubaid period on Kenan Tepe's high mound. In the lower town we exposed parts of several Late Chalcolithic structures and carefully sampled several work areas dating to multiple phases within the Late Chalcolithic sequence (Rothman 2001). During the summer of 2006, we

<sup>1</sup> This report is very much the product of teamwork. Bradley J. Parker researched and composed the introduction and conclusion as well as the section on the excavation of the Ubaid period levels. He also compiled and edited this report. Catherine Foster researched and composed the section on the excavation of the Late Chalcolithic levels at Kenan Tepe. Under the guidance of Kathryn Twiss, Jennifer Henecke and Arzu Demirergi researched and composed the section on the Ubaid faunal remains. Marie Hopwood authored the sections on the figurines and the seals, and, together with Melissa Eppihimer, wrote the small finds section. Dave Hopwood researched and composed the section on the burials. The remote sensing section is the work of Andrew Creekmore.

<sup>2</sup> We would like to thank the Turkish Ministry of Culture and Tourism for granting us permission to conduct this research. We would also like to thank Necdet İnal and Nevin Soyukaya of the Diyarbakır Museum for their support of the project and Kathryn Twiss for her assistance on the Ubaid faunal remains.

<sup>3</sup> During the 2005 field season, the UTARP team consisted of the project director Bradley J. Parker (University of Utah), the project co-director Lynn Dodd (University of Southern California), Diana Backus, Marco Baldi (University of Utah), Andrew Creekmore (Northwestern University), Melissa Eppihimer (Harvard University), Jennifer Henecke (SUNY Stony Brook), Marie Hopwood (SUNY Binghamton), Jeanne Nijhowne (SUNY Binghamton), Emily Ogle (University of Southern California), Catherine Foster (University of California at Berkeley) and Jonathan Vidar (University of Southern California). Turkish participants included Bekir Gordil (University of California, Los Angeles), Sibel Torpil (Bilkent University) and M. Barış Uzel (Ege University). Our government representative was Omur Turfan. Research was funded by generous grants from the Curtiss T. and Mary G. Brennan Foundation in collaboration with the University of Utah, the University of Southern California and the United States National Endowment for the Humanities.

<sup>4</sup> During the 2006 field season the UTARP team consisted of the project director Bradley J. Parker (University of Utah), the project co-director Lynn Dodd (University of Southern California), Marie Marley (SUNY Binghamton), Jennifer Henecke (SUNY Stony Brook), Catherine Foster (University of California at Berkeley), Jonathan Vidar (University of Southern California), Ashley Sands (University of Southern California), David Hopwood (SUNY Binghamton), Sibel Torpil (Bilkent University) and M. Barış Uzel (Ege University). Our government representative was Musa Tombul. Research was funded by generous grants from the Curtiss T. and Mary G. Brennan Foundation in collaboration with the University of Utah, the University of Southern California and the United States National Endowment for the Humanities.

conducted our second study season during which time members of the UTARP team processed and analyzed an extensive amount of material collected in previous seasons.

Kenan Tepe is a multi-period mound measuring approximately 4.5 hectares in total size (figure 1). It is located on the north bank of the Tigris approximately 15 kilometers east of the modern town of Bismil (figure 2). Kenan Tepe is composed of a 32-meter high mound and a lower town to the northeast of the main mound (for a more in-depth description see Parker *et al.* 2003 and Parker and Dodd 2005). Archaeological research over the past seven years has shown that Kenan Tepe was occupied during five broad periods. The earliest remains unearthed at Kenan Tepe thus far belong to the so-called Late Northern Ubaid cultural complex. These remains are concentrated on the eastern slopes of Kenan Tepe's main mound. Carbon samples taken from outside three Ubaid structures in trenches D5, D8 and E2 yielded 2-sigma calibrated dates ranging around 4650 BCE. Remains dating to the Late Chalcolithic period have been discovered in abundance in the easternmost area of Kenan Tepe's lower town and in several soundings near the high mound (Parker *et al.* 2003; 2006). Carbon-14 analyses from Late Chalcolithic contexts have yielded dates in the late LC 3 or early LC 4 period (between ca. 3600 and 3500 BCE) and the LC 5 period (ca. 3100 BCE [Creekmore 2007; Parker *et al.* 2006]). Four more carbon dates from fortification/retaining walls on the high mound show that occupation continued through the Late Chalcolithic to Early Bronze Age transition (ca. 3000 BCE [Parker *et al.* 2006; Parker and Dodd 2005]). An analysis of the ceramics from various areas at Kenan Tepe combined with two carbon dates confirms that occupation at the site probably continued at least through the first half of the Early Bronze Age. Middle Bronze Age remains have been recovered on the eastern, western and northern slopes of the high mound. Carbon-14 analysis places these remains around 1800 BCE (Parker *et al.* 2003; Parker and Dodd 2003). Kenan Tepe was again occupied in the Early Iron Age as evidenced by the presence of Early Iron Age Corrugated Wares to between ca. 1050 and 900 B.C. (Parker *et al.* 2004. Also see Parker 2003). This report will focus on excavations conducted during the summer of 2005 and processing and analysis conducted during the summer of 2006.

### **The Ubaid Period: Excavation Summary**

Ubaid or Ubaid-related material culture has been identified in three areas of the site. Ubaid ceramics were first discovered in a sounding in Area E on the southeastern slopes of the high mound during the 2000 field season (figure 3). In 2001, UTARP team members discovered the remains of part of an Ubaid period structure in trench D5 on the eastern slopes of the high mound. In 2002, Ubaid period remains were encountered at the bottom of our step trench in A9 and excavations continued in Area D. During the 2004 field season UTARP team members delineated the extent of Ubaid period occupation at the site by digging a number of trenches and soundings in the western part of Kenan Tepe's lower town and by digging a number of soundings on the high mound. This research suggests that Ubaid period occupation is restricted to a relatively small area on the eastern and southern slopes of Kenan Tepe's high mound (Parker *et al.* 2006). With these data in hand, UTARP team members focused Ubaid research during the 2005 and

2006 field seasons on broadening our horizontal exposures and processing the Ubaid material excavated in previous seasons.

#### *Area D Trenches 5 and 9*

In a previous report we outlined our earlier discovery of part of a well-preserved domestic structure in trench D5 (figures 3 [Parker and Dodd 2005]). Two rooms from this structure (which we refer to as *Ubaid Structure 1*) protruded into this trench from its south baulk. North of these rooms we excavated a large and well-preserved outside work surface that contained a variety of domestic debris *in situ*. This surface was covered by thousands of compacted plant pseudomorphs. Examination of the structure and morphology of these pseudomorphs suggests that they are remains of barley or wheat chaff. In part of the trench this organic mass covered the pseudomorphic remains of a very finely made grass mat. The same surface also yielded numerous examples of painted fine and unpainted coarse Ubaid pottery, obsidian and chert lithics, a bone bead, a stone pendant in the shape of a fish, two bone awls, several spindle whorls, three fish net weights and a fragment of a ground obsidian bowl (for a complete description see Parker and Dodd 2005). Carbon samples taken from this surface, and from a fireplace on this surface, together with a preliminary analysis of the ceramics from these and neighboring contexts, confirmed that these remains belong to the Late Northern Ubaid cultural complex dating to approximately 4600 BCE. These discoveries prompted us to open two new trenches to the south (D8) and east (D9) of trench D5 in the 2004 field season (figures 3 and 4). The goal of these operations was to expose more Ubaid contexts in and around *Ubaid Structure 1*. We also continued excavation in trench D5 in an attempt to unearth any earlier architecture that might lie under *Structure 1*. We continued to pursue these goals during the 2005 and 2006 field seasons.

Research in trenches D5 and D9 did not yield the results we had hoped for. We did not encounter earlier architecture below *Ubaid Structure 1*, nor did we find more contexts contemporary with *Ubaid Structure 1* in trench D9. Instead, excavations in trench D5 revealed thick deposits of ashy fill with only a few ephemeral traces of architecture. A sounding that we began at the end of the 2004 field season and continued during the 2005 field season suggests that these layers of fill continue for at least another 1.5 meters below the current elevation of the trench. Remains in the D5 sounding are characterized not by architecture, but instead by a number of ashy layers and at least two hearths.

In our previous report we described the Late Chalcolithic oven/kiln that must have destroyed any remains of *Ubaid Structure 1* that may have extended into trench D9 (Parker *et al.* 2006: 77-9). During the 2005 field season we chose to continue excavations in D9 in hopes of unearthing earlier Ubaid period levels. This research revealed that during the Ubaid period, the edge of Kenan Tepe's main mound was buried several meters within the existing mound. This ancient edge of the mound is now clearly visible cutting through trenches D5 and D9 from the northwest to the southeast. These data suggest that before the construction of *Ubaid Structure 1*, this area, which was literally on the edge of the main mound during the Ubaid period, contained only fireplaces and possibly outside work areas.

### Area D Trenches 8 and 10

Suspecting that the area to the south of trench D5 may contain more remains of *Ubaid Structure 1*, we began a 5 by 10 meter excavation unit (designated trench D8) south of trench D5 during the 2004 field. Since trench D8 began at the same level on the slope of the mound as trench D5, we knew that it will take at least two field seasons to reach the Ubaid levels. (These layers lie some 2.5 meters below ground surface on the uphill side of the trench). Much to our delight, we reached two phases of extensive and well-preserved Ubaid architecture in trench D8 at the beginning of the 2005 field season. This discovery prompted us to open another trench (D10) just south of trench D8 (figures 3 and 4).

The results from these trenches are truly impressive. The first architecture we encountered was slightly higher in elevation than the remains of *Ubaid Structure 1* in trench D5 (described above). Ceramic analysis nevertheless confirmed that these remains belong to the Late Northern Ubaid cultural complex. This architecture consisted of two groups of mud brick walls running roughly north-south and east-west (figure 5, this architecture is hereafter referred to as *Ubaid Structure 2*). These walls intersected at roughly right angles forming a series of small square or rectangular chambers or cells measuring between 1 and 1.5 meters in width. In the north half of trench D8 these walls formed five such cells. They were separated from a similar group of cells in the southern half of the trench and extending into the neighboring trench (D10) by an earthen surface (assigned locus 93) measuring approximately 2 meters north-south by 3.5 meters east-west. Surface L93 was characterized by several concentrations of ash, flat lying late Ubaid ceramic sherds and, in the southwest corner, a concentration of yellowish clay. A large concentration of stones in a fine silt matrix was discovered lying directly on the eastern portion of surface L93. A variety of ceramics, lithics and a few animal bones were discovered within this concentration of stones. A carbon sample taken from this surface yielded a 2-sigma calibrated date of 4700-4460 BCE (Table 1).

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age
Beta – 208202 SAMPLE: D.8.93.1	5720 +/- 50 BP	-24.4 o/oo	5730 +/- 50 BP
ANALYSIS: AMS-Standard delivery MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid 2 SIGMA CALIBRATION: Cal BC 4700 to 4460 (Cal BP 6650 to 6410)			
Beta – 208204 SAMPLE: E.2.134.10	5770 +/- 40 BP	-24.2 o/oo	5780 +/- 40 BP
ANALYSIS: AMS-Standard delivery MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid 2 SIGMA CALIBRATION: Cal BC 4720 to 4520 (Cal BP 6670 to 6470)			
Beta – 208205 SAMPLE: F.2.2065.10	4530 +/- 50 BP	-26.0 o/oo	4510 +/- 50 BP
ANALYSIS: AMS-Standard delivery MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid 2 SIGMA CALIBRATION: Cal BC 3360 to 3020 (Cal BP 5310 to 4970)			
Beta – 208206 SAMPLE: F.19.14.6	4330 +/- 40 BP	-25.3 o/oo	4330 +/- 40 BP
ANALYSIS: AMS-Standard delivery MATERIAL/PRETREATMENT: (charred material): acid/alkali/acid 2 SIGMA CALIBRATION: Cal BC 3020 to 2890 (Cal BP 4970 to 4840)			

Table 1: Carbon dates.

The cells on either side of surface L93 contained discrete groups of *in situ* remains, including grain pseudomorphs in at least two, ceramics in one and a burial in another. The grain pseudomorphs (discovered in L82 and L88) were identical to those excavated in trench D5 during the 2001 and 2002 field seasons. The burial (L90) which was discovered in cell L87 presents an interesting problem. Although the skull and many of the disarticulated small bones of the hands and forearms were within cell L87, the long bones of the legs extended into, not under, the mud bricks that made up wall L70 (figure 6). (For analysis, see below under “Burials.”) Several factors suggest that this was a secondary burial. First, the skeleton was disarticulated. Second, only the skull, some of the arm bones and the leg bones were included in this inhumation. These factors, plus the very unusual position of the bones, partially within cell L87 and partially contained in the matrix of wall L70, strongly suggest that these remains were purposefully deposited as a secondary inhumation during the construction of *Structure 2*.

In the southern portion of trench D8, a second set of intersecting mud brick walls formed two more small cells. These walls proceeded into the neighboring trench D10. The Ubaid architectural remains in trench D10 were partially destroyed by several large pits (figure 4. Also see figures 5 and 7). Nevertheless, the Ubaid period walls clearly demarcated at least one more rectangular cell. Although a large pit cut into this cell, what remained suggests that the interior of the cell had at some point been filled in with mud bricks, creating a mud brick platform, surface or foundation. Because of the disturbed nature of the contexts in and around the southern portion of *Ubaid Structure 2*, we cannot say with certainty whether or not these bricks belonged to the original construction of *Ubaid Structure 2* or if they were a later addition. However, further excavation in trench D8 revealed that some of the cells of the earlier *Ubaid Structure 1* had been filled in with mud bricks to facilitate the construction of *Ubaid Structure 2*. This being the case, we suspect that these bricks are a later addition. If this hypothesis is correct, a third phase of Ubaid architecture post-dating *Ubaid Structure 2* may have been destroyed by erosion and/or later construction on this part of Kenan Tepe’s main mound.

The cells formed by the various sets of walls unearthed in trenches D8 and D10 are obviously too small to have been used as living spaces. Instead, we believe they served as storage chambers that together formed two free-standing storage buildings. We interpret the surface between these two groups of walls and cells as a courtyard or work area between two cell-plan storage structures. This type of construction is not unprecedented. Parallels dating to the Ubaid period can be found in Syria at the sites of Tell Kosak Shamali (Nishiaki 1999) and Tell al-’Abr (Hammade and Yamazaki 1995). Other sites like Tell Mashnaqa and Hammam et-Turkman may also have had similar architecture during the Ubaid period (Akkermans and Schwartz 2003). This type of architecture is also not unknown in Iraq. At Tell Adaba, for example, similar small cell rooms have been excavated some of which, like Kenan Tepe, contained the remains of grain (Jasim 1989). In southern Iraq, similar structures have been excavated at the site of Tell el’Oueili (Huot 1989).

*Ubaid Structure 2* was exceptionally well preserved. Only at its southern end (the portion contained in trench D10), was the architecture disturbed by later pits. All in all,

*Ubaid Structure 2* measured more than five meters in width (east-west) and 14 meters in length (north-south) (figures 5 and 7).

After removing *Ubaid Structure 2*, we came upon an earlier group of walls and cells that very closely mirrored the northern half of *Ubaid Structure 2* (figure 8). These remains were discovered at the precise elevation of the portion of *Ubaid Structure 1* unearthed in previous seasons in trench D5. Furthermore, the fact that the alignment and position of the walls entering the baulk between trenches D8 and D5 line up with the position of the walls in trench D5 confirms that this set of architectural remains does in fact belong to *Ubaid Structure 1*. Although these remains are almost identical in position and character to the northern half of *Ubaid Structure 2* described above, we did not unearth similar architecture in the southern portion of trench D8 or in any of trench D10. There are two possible explanations for this. First, since we were not able to continue far beyond the foundations of *Ubaid Structure 1* before the end of the 2005 field season, it is possible that more architecture still lies unexcavated in the southern portion of trench D8 and in trench D10. The second, and perhaps more likely explanation is that *Ubaid Structure 1* was considerably smaller than *Ubaid Structure 2*.

#### *Area E Trench 2*

We first began excavation in Area E during the 2000 field season when we opened a 2 by 2 meter sounding in the area of a modern disturbance on the southeastern slopes of Kenan Tepe's high mound (figure 3). In the 2004 field season, we expanded this sounding into a 5.5 by 3.5 meter trench. The trench was again expanded in the 2005 and 2006 seasons. The trench now measures approximately 6 by 8 meters. Since trench E2 still consisted of two parts (the original sounding and the expansion begun in 2004) at the beginning of the 2005 field season, we concentrated our efforts on bringing down the expanded part of the trench to the level of the bottom of the sounding. The first few weeks of the 2005 field season thus revealed a street and the corner of a structure dating to the Late Chalcolithic period. Once these remains were removed, we came down on a small portion of another multi-celled Ubaid period building (figure 9). This building, which we will refer to as *Ubaid Structure 3*, was located in the southwestern corner of trench E2. Although partially disturbed by several later pits, we discovered the northeastern bearing wall of this structure, one complete cell and portions of at least one more cell. The northeastern half of the trench consisted of a large well-preserved outside work surface that contained numerous ceramics, lithics and animal bones *in situ*. A carbon sample taken from this surface (L134) yielded a 2-sigma calibrated date of 4720-4520 BCE (Table 1).

We have obvious parallels for the remains discovered in trench E2 from other trenches at Kenan Tepe. Although the architectural remains in E2 are not extensive, they clearly belong to the same type of building as those discovered in trenches D5 and D8. The outside surface covering the northeastern half of trench E2 is paralleled by a similar surface uncovered in trench D5 during the 2001 and 2002 field seasons. Interestingly we also have a burial (E.2.146.6) in trench E2 that is partially contained within the walls that make up *Ubaid Structure 3*. In this case however, these were the remains of an adult female who was buried in a large ceramic vessel (figure 10). (For analysis, see below



under “Burials.”) Unlike the burial in trench D8, this appears to have been a primary inhumation. The body was well articulated and the skeleton was complete. Our assumption is that the body was inserted into the vessel (head first) and that the vessel was then placed in the cell during the construction of *Ubaid Structure 3*.

#### *Area I Trench 2*

During the 2004 field season we opened a new 1 by 4 meter trench in Area I. The purpose of this exploratory trench was to determine if Ubaid and/or Late Chalcolithic remains extend under Kenan Tepe’s high mound. Trench I2 was excavated in two steps. The first consisted of the northern 2 meters of the trench and the second consisted of the southern 2 meters of the trench. Both of these steps were excavated to approximately 2 meters below ground surface. In our previous report, we concluded that the Ubaid and Late Chalcolithic settlements do not extend under the main mound (Parker and Dodd 2005). After considering these data again, Lynn Dodd suggested that we test this hypothesis by excavating a 1 by 1 meter sounding in the upper step of trench I2. We therefore dug this sounding another 2.75 meters. This sounding produced no Ubaid or Late Chalcolithic sherds or architectural remains. Thus we can now say with much more certainty that remains from both of these periods do not extend under Kenan Tepe’s main mound.

#### *Area F Trench 6*

In our previous reports, we mentioned that a handful of Ubaid ceramic sherds were discovered at the bottom of trench F6 in Kenan Tepe’s lower town (Parker and Dodd 2005: 71). If these sherds betray the existence of Ubaid architecture in Kenan Tepe’s lower town, then this would drastically affect our calculations of the size of Kenan Tepe’s Ubaid period settlement. During the 2005 field season we extended trench F6 in an effort to clarify this question. Excavation in this trench did not produce any Ubaid ceramics and no substantial architecture was discovered. Based on these data, we conclude that Kenan Tepe’s Ubaid period settlement did not extend into Kenan Tepe’s lower town.

### **The Late Chalcolithic Period: Excavation Summary**

Late Chalcolithic research during the 2005 and 2006 field seasons concentrated on new and existing trenches in Area F. Area F is located on a flat terrace approximately 23 meters above the Tigris River northeast of Kenan Tepe’s main mound (figure 1). Previous work on this part of the site has revealed Late Chalcolithic occupation ranging from the LC 3 (ca. 3600-3400 BCE) through the LC 5 (ca. 3400-3000 BCE [Rothman 2001]).<sup>5</sup> In our previous reports, we subdivided the excavated contexts from Area F into seven levels, which generally correspond to occupational layers (Creekmore 2007; Parker *et al.* 2003, 2006; Parker and Dodd 2005). In 2004, we clarified the chronology of the lower town by completing excavations in trench F1 (Parker *et al.* 2006). During the 2005 season, we

<sup>5</sup> Based on 2-sigma calibrated dates derived from wood charcoal. The full range of dates are published in Parker *et al.* 2003: Table 2.

concentrated on broad exposures to uncover a wider range of occupational layers and elucidate the nature of settlement in this area of the site. To do so we focused on four new trenches (F19, F20, F21, F22) and continued excavation in four existing trenches (F2, F7, F8, F9). The contexts uncovered since 2004 span Levels 1 through 5 and date between ca. 3360-2890 calibrated BCE (Table 1).

*Trenches F19, F20, and F22 (Levels 1-4)*

To uncover the source of a mud brick wall collapse and earthen surface previously excavated in trench F1 (Parker *et al.* 2003), UTARP team members opened three trenches on the eastern, western and southern edges of trench F1 in 2005 (trenches F19, F20, and F22 respectively [figure 3]). The contexts uncovered in these new trenches span Levels 1-4, roughly the Late Chalcolithic-Early Bronze Age transitional period.

Level 1 includes intersecting pits (L6, L13) in trench F22 that contained the buried remains of two individuals. The first individual (F.22.6.1 individual 1) consisted of a nearly complete articulated skeleton with flexed legs and knees rolled to the north. A bronze pin (F.22.6.2 see below under “Small Finds”) with a straight shaft and ball head was uncovered near the legs. The second individual (F.22.6.1 individual 2), who was probably interred as a secondary burial, disturbed the skull and left arm of Individual 1 (see below under “Burials” for discussion). Fragments of a pedestal base with vertical burnish, carinated bowl with simple rim (figure 11 D), and a fine ware plain rim bowl with corrugated exterior (figure 11 G) were recovered inside the first burial pit. These burials are similar to other flexed and extended simple pit inhumations uncovered throughout Area F (in trenches F1, F5, F7 and F14) either adjacent to or cutting expansive cobblestone surfaces characteristic of Level 2.

The F22 burials should probably be grouped together with a burial from the southwest corner of F1 for the following reasons. First, spatially they are very close together. Second, there is only a 20cm difference in their elevations. And third, they are similarly oriented along the same east-west axis. It is possible that these burials were intentionally placed in or over an earlier structure in trenches F19, F20 and F22 (see below).<sup>6</sup> A heavily disturbed burial from F19, in which only the skull, teeth, and extremities (fingers/toes) were preserved, is also tentatively placed in Level 1. Level 2 consists of cobblestone surfaces mostly devoid of cultural material and pits in F20 (L4) and F22 (L4) containing burnt pottery, animal bones, flint and obsidian debris. These cobblestone surfaces were constructed over a fill layer in F19 and F20 composed of burnt mud brick slump and occupational debris that corresponds to Level 3.

The most significant architecture comes from Level 4, where we unearthed portions of a large, probably domestic, structure partially excavated in previous seasons. The portion of the structure thus far excavated measures approximately 7 by 9 meters. The south wall lies in F22, where two sets of east-west running walls (L11 and L17; L16 and L21) adjoin to form a double wall, perhaps for two abutting buildings. A small wall stub (L22), which is probably a blocked doorway, forms a passage with the southern end

<sup>6</sup> Thanks to Andrew Creekmore for advancing this interpretation.

of the west wall (L11) of the structure in trench F20. A poorly preserved mud brick wall (L10), 2 meters in length with a cobblestone foundation represents the extension of the southern wall of this structure into F19. We uncovered a plethora of burnt mud bricks with plastered sides scattered across the entirety of this area, which, when combined with evidence for burning in adjacent trench F1, confirms our previous assessment (Creekmore 2007:83; Parker and Dodd 2005:75) of a massive conflagration.

A baked mud plaster surface, a portion of which we previously uncovered in F1 (Creekmore 2007:83-4), represents a living space within this structure. This surface was preserved across F19, F20, and F22 and was bonded to the walls within these trenches. The ceramics recovered from above this surface and from the surrounding contexts in trenches F20 and F22 are representative of local Late Chalcolithic and Early Bronze Age transition at Kenan Tepe. Of the ceramics that have been analyzed, the most common are coarse chaffy cook pots, holemouth jars with simple squared rims (figure 11 M), carinated or hemispherical cups with beaded rims (figure 11 L, O), hammerhead rim bowls (figure 11 J), and thicker fabric storage jars (figure 11 N). Two complete vessels – a carinated, slightly beaded rim pot (figure 11 F) and a flat-base bowl with an open simple rim (figure 11 I) – derived from an additional trench (F21) that was excavated in the westernmost extension of Area F. A mix of chaff and calcareous and micaceous grit tempers is dominant, except in the fine ware vessels where only very small grit or no temper appears (see below). Horizontal and vertical burnish is also present, but rarely any wash, slip or paint with the exception of a grey burnished ware (figure 11 C). Decorations are limited to incised patterns. Two body sherds with this decoration (figure 11 A, B) could be fragments of a chevron design, of which a complete vessel with this incised pattern was excavated in trench F7 (see below and figure 12 C). Fine ware or Kenan Tepe “Type 7” vessels are also among this corpus. These ceramics vary in shape from necked juglets with tiny beaded rims (figure 11 K) to larger open bowls and/or cups distinguished by parallel, linear incised decorations on the exterior body (figure 11 E, G). This form is very similar to Ninevite 5 type vessels from Salat Tepe (Ökse *et al.* 2001: figure 7: 10), Aşağı Salat (Şenyurt 2002: figure 6:2, figure 14), and Tell Brak (Matthews 2003: figure 5.57: 17).

#### *Trenches F2, F7, F8, F9 (Levels 4-5)*

The majority of contexts excavated over the last two seasons coincide with Level 4 and are characterized by superimposed structures, mud-plastered floors, debris-filled pits, and primary burials. Trench F2 contains two phases of mud brick walls, plastered surfaces, and compacted pebble floors. The earlier phase (phase B) consists of a well-preserved structure with plastered mud brick walls (L2050, L2064), one of which was half a meter thick (L2050) and a plastered niche or platform (L2051 [figure 15]). Multiple superimposed plaster surfaces, which also contained grain pseudomorphs (L2056), represent the interior occupation levels of the structure, while a pebble surface (L2049) corresponds to the exterior levels. A 2-sigma calibrated carbon date derived from an interior surface places this structure within the end of the Late Chalcolithic or LC 5 period (Table 1). Unfortunately the plastered inside surfaces did not yield much in the way of artifacts except for a rectangular stone bead. However, other debris in and around this structure did contain numerous finds, including loom weights, grinding stones, and an

animal figurine. These data suggest that small-scale domestic activities, such as cloth manufacture, processing of agricultural products, food preparation, and perhaps household rituals, were performed in association with this structure.

Three features cut into this interior surface. One (L2066) is a pit filled with small pieces of coarse ceramics, plaster fragments, and a heavily damaged ceramic animal figurine (F.2.2066.6). (See below under “Figurines.”) Another is a shallow pit (L2067) covered by a compact black ashy surface into which a complete string-cut base bowl was set (L2070) (figures 14 and 13 A). The last and larger pit (L2042) cut both the plaster surface and the niche, and was filled with mud brick debris, pottery fragments, and a cylinder seal (F.2.2042.7). (See below under “Seals.”) At the base of this pit, UTARP team members uncovered portion of a child inhumation. It is unclear whether these pits (L2066, L2042) are contiguous with the above-mentioned structure. However, surface L2065 connects smoothly with the black ashy layer and does not cover the string-cut base bowl, suggesting that this enigmatic feature was in use during the life of the structure, or at least, the final phase of the interior surface. The function of this sunken bowl feature is unclear, although ashy remains adhering to the interior surface of the bowl suggest the presence of fire or burning at some point around this feature.

This structure is not reused during the later occupation phase (A). Instead, we uncovered an L-shaped mud brick wall (L2034), preserved to only two courses, with an adjacent mud brick platform (L2033) and pebble surface (L2035). Though poor preservation may be an issue, we cannot rule out the possibility that this L-shaped wall was never a portion of a four-sided structure, but instead served as some type of retaining or separation wall.

All contexts excavated in trench F7 during the 2004 and 2005 field seasons correspond to Level 4. A carbon date of 3360-3020 BCE taken from a large pit in F7 in 2002 and the plastered surface from F2 dated to 3360-3020 BCE provide a *terminus post* and *ante quem* for these contexts, placing them firmly within the last centuries of the fourth millennium BCE. Level 4 contexts unearthed in 2005 in trench F7 comprise at least five separate building phases (phases A-E) generally distinguished by a series of small overlapping walls, pebble surfaces, and plaster floors cut by later pits and burials.<sup>7</sup>

The earliest phase (E) is composed of a 1.5m long mud brick wall stub bonded on its southern face to a heavily burnt mud plaster surface. On its eastern side, the floor slopes up to meet a door socket. Directly adjacent is a sunken plaster pit measuring 55 cm in diameter and 5 cm in depth. The heaviest concentration of burning and fired material, including ceramics and animal bones, come from this feature suggesting that it was used as a fire pit. Encompassing this surface, but at a higher elevation, was a 3 by 0.5 meter mud brick wall (L7209) that is a combination of two walls joined at a corner (Phase D). To the north of this wall is a compacted clay surface with flat-lying ceramic fragments and rounded river pebbles.

This architecture does not continue into the following phase (C), which consisted of a number of disjointed features including wall stubs (L7202, L7201) and a large pit

<sup>7</sup> Note that these phases should be considered tentative until such time as further research can be carried out.

(L7199). A burial (F.7.7200.1) either belongs to this phase or the following one (B), when a multi-roomed structure opened onto a courtyard. This structure (L7178) was composed of multiple connecting walls forming two magazine-type rooms roughly 1 meter wide and 2.5 meters long. Flimsy construction, lack of a floor, and minimal debris suggest this building may have been used for keeping animals or as temporary agricultural storage. Our assumption is that an adjacent structure (L7163, L7154), only the corner of which falls within F7, served as the primary living space. The latest phase (A) was a single-room structure consisting of walls (L7160, L7158) and a compacted pebble floor (L7169) with a door socket (L7152.4). A cache of footed vessels (figure 12 B-C, G-I) and Ninevite 5 forms characteristic of the Late Chalcolithic-Early Bronze Age transition were associated with these features.

A notable feature in F7 is a brick-lined burial (L7221) found adjacent to the Phase B buildings (figure 16). Composed of three courses of burnt and unburnt brick, this inhumation, consisted of an adult female in a flexed position on her left side with an east-west orientation (See below under “Burials.”) Her arms bent so that the hands rested beside the face. No evidence of a roof or cover was discovered. It is unclear whether this was originally a brick-lined pit (similar to the above-mentioned adolescent burial [F.7.7200.1]) or a freestanding structure. When compared with other Late Chalcolithic tombs in southeast Anatolia and northern Iraq, the possibility that this represents a freestanding structure seems more likely. The “libn” burials at Tepe Gawra levels VIII to XIA/B (Rothman 2002, Tobler 1950), though dating from an earlier phase (LC 2-3; 3900-3700 BCE), are a good example of rectangular stone and mud brick tombs of the Late Chalcolithic. An even more striking parallel is Tomb J at Korucutepe Stratum XXXIX, dating to the very end of the fourth millennium (van Loon 1975). In this case, the rectangular mud brick tomb most probably had a wooden roof covering a single female, also flexed on her left side in an east-west orientation with arms bent and hands resting adjacent to her face. Unlike the example from Kenan Tepe, which contained no grave goods, Tomb J at Korucutepe had a rich funerary assortment including a variety of silver jewelry and limestone bead decoration from the individual’s clothing.

In trench F8, Level 4 contains a single-course mud brick wall (L8034) with a possible doorway. This wall does not continue into trench F2 to connect with L-shaped wall L2034, but their orientation is similar, suggesting perhaps different building phases of the same structure or contiguous features. The fill surrounding this wall included a worked stone and pot stand. Level 4 in trench F9 yielded a one-course mud brick wall (L9035) and a small rectangular pebble surface (L9036), in whose suprasurface fill a bronze needle or pin was uncovered (F.9.9036.4). (See below under “Small Finds.”) Whether these features are contiguous with an adjacent deep pit (L9045) extending from the north baulk is unclear. The northern half of this pit was uncovered in trench F7 (L7146). A heavily disturbed burial (L9042) from the southwest corner of trench F9 partially obscured by the baulk may be associated with this level.

During the 2005 season, UTARP team members only reached Level 5 in trench F9. It consists of a modest building of packed mud pisé construction (L9052). An entrance, marked by a door socket, is located on the southern side along with a plaster surface (L9051) that abruptly ends at the threshold. A packed mud surface covered with

white pseudomorphs (L9049) continues inside the structure where just inside the doorway, it noticeably slumps. Upon further excavation, we discovered that this floor sealed a 1-meter deep pit (L9055) which accounted for this slumping. Inside the pit were hammerhead rim bowls (figure 13 G), a carinated cup with beaded, incurved rim (figure 13 D), lithics, shell, and animal bones. A later pit (L9045) cuts the entire structure.

Ceramics from these trenches are similar to other Level 4 contexts from the rest of Area F. This includes globular cook pots with straight necks and slightly everted rims, chaffy open platters (figure 13 F), hammerhead rim bowls (figure 13 G, H), holemouth vessels with thickened rims (figure 13 K), and carinated cups with small beaded rims (figure 13 D). The string-cut base bowl (figure 13 A) from trench F2, though similar in shape and manufacture with “Uruk-type” coarse conical bowls from Hacinebi (Stein *et al.* 1996: 234, figure 22 G-H; Pearce 2000: 120, figure 13 b), is more comparable to mass-produced coarse bowls with inward beveled rims at Arslantepe VII and VIA (Frangipane 1993: 147, figure 9: 6, 10). In addition, a distinctive jar with triangular lug-handles (figure 12 D) is similar to cook pot examples from Norşun Tepe (Gülçur 2000: Abb. 45 *Grifflappen*). Other examples of this type of lugged jar from Salat Tepe (Ökse 1999: figure 4), and Kurban Höyük IV (Algaze 1990: 329, pl. 135) are dated to the Early Bronze Age, though in the case of Kurban, to the end of the period (EBII-III).

Late Chalcolithic-Early Bronze Age transitional fine wares are also present; the best examples come from a cache of whole vessels uncovered in trench F7 (Level 4, Phase A) adjacent to a small structure (L7160, L7158). A deep footed bowl with thumbnail impressed decoration around the exterior bottom of the bowl (figure 12 B) held another smaller footed bowl with incurved rim (figure 12 I), and two fine ware ring base bowls (figure 12 G and H), one with a parallel incised linear design (figure 12 G). These ring base bowls have clear parallels with Ninevite 5 examples at Salat Tepe (Ökse *et al.* 2001: figure 7: 4, 10), Aşağı Salat (Şenyurt 2002: figure 6: 2, figure 14), and Tell Brak (Matthews 2003: figure 5.57: 17). Likewise, thumbnail impressed designs are also known at Kurban Höyük VI (Algaze 1990: 251, pl. 23 N, O) though these are reserved slip examples. Directly associated with this whole vessel cache was a complete footed jar with straight rim, slightly everted neck, and rounded body with distinct shoulder (figure 12 C). On this vessel’s shoulder is an incised chevron or zigzag design between two groupings of parallel incised lines. A single band of incised cross-hatching on vessel shoulders is also known at Arslantepe VIA (Frangipane 2000: figure 8) and other Early Bronze Age I sites from the Karababa basin (Gerber 2000: 215, Abb. 3: 10).

### **Preliminary Assessment of the Faunal Remains from the Ubaid Period**

Although certain aspects of Ubaid material culture (i.e.; ceramics and architecture) are relatively well investigated, there has been little focus on zooarchaeological research. This is primarily due to the limited number of excavations at Ubaid sites (Huot 1989; Jasim 1985, 1989; Roaf 1988). In addition, the many Ubaid sites in southern and central Iraq, such as Abada, Eridu, ‘Oueili, Madhhur, Ur and al-’Ubaid, were excavated before the systematic collection and analysis of faunal remains became the norm. As a result, few preliminary or final publications on Ubaid faunal material have been published



(Beech and Husaini 2005; Gourichon and Helmer 2003; Zeder 1995). The following analysis is a preliminary assessment of the multiphase faunal assemblage from the Ubaid settlement at Kenan Tepe. The goal of the analysis, when completed, will be to understand patterns of change between the various phases of Ubaid occupation at Kenan Tepe. Given the differences in settlement structure especially between Ubaid Phase 1 and Ubaid Phase 2 and 3, this analysis will hopefully contribute to an understanding of changing degrees of mobility and sedentism at the site. The location of Ubaid structures in areas D and E also provides an opportunity to examine variation in animal management practices and social or economic status within the settlement during each specific phase.

### *Context*

The stratigraphic and architectural evidence from the Late Ubaid settlement at Kenan Tepe (4720-4460 BCE.) suggests multiple stages of occupation. Faunal samples from all appropriate contexts in each phase were exported during the 2006 field season. This report represents the analysis of a subsample of these data. The analyzed sample derives from the deepest excavated portion of trench D5 and probably represents the earliest phase of Ubaid occupation at the site (Kenan Tepe's *Ubaid Phase 1*). There appears to be no architecture in this phase, leading to the hypothesis that this settlement was small and/or composed of largely impermanent structures (Parker *et al.* 2006: 74-5). The features and artifactual remains (including grinding stones, surfaces and a hearth) suggest that this was an outdoor work area.

The analyzed samples emanate from a number of stratigraphic contexts including two plaster surfaces (L5227 and L5225), a hearth feature and a compact unplastered surface (L5228), which likely represents an activity area associated with the hearth. A layer of debris (L5226) laid above these loci, and two grinding stones recovered near the hearth within this debris indicate a link between these deposits. A later layer of fill (L5220) sealed this area and was included in the analysis to increase the sample size and provide contextual diversity. The samples analyzed were collected by hand during excavation or were caught in a quarter-inch mesh during screening. These recovery techniques clearly bias the samples against small species and elements, which will hopefully be recovered in the microarchaeology samples currently being processed at the University of Utah. The faunal assemblage was divided into two subsamples: one from the general fill layer (locus 5220; hereafter referred to as the fill sample) and one from the underlying work surface and hearth (loci 5225-5228; hereafter referred to as the hearth sample).

### *The Faunal Data*

The assemblage analyzed consists of 631 fragments, of which 392 (62%) were identifiable to class, genus or species (Table 2). Material that was not identifiable to genus or species was grouped into three size categories: small mammal (i.e.; caprine size), medium mammal (i.e. pig size) and large mammal (i.e.; cow size). The fill sample consisted of 221 identifiable specimens, and the hearth sample included 171 identifiable specimens.



Species	TNF	%	Weight	%
<i>Bos taurus</i>	46	7.29	558	25.32
<i>Capra hircus</i>	2	0.32	11	0.50
<i>Canis sp.</i>	2	0.32	21	0.95
<i>Cervus elaphus</i>	3	0.48	235	10.66
<i>Ovis aries</i>	3	0.48	23	1.04
<i>Ovis/Capra</i>	140	22.19	522	23.68
<i>Sus sp.</i>	17	2.69	72	3.27
<i>Testudo sp.</i>	1	0.16	12	0.54
fish	4	0.63	3	0.14
small mammal	108	17.12	229	10.39
medium mammal	15	2.38	91	4.13
large mammal	51	8.08	336	15.25
indeterminate	239	37.88	91	4.13
<b>Totals</b>	<b>631</b>	<b>100.00</b>	<b>2204</b>	<b>100.00</b>

Table 2: Total list of species identified in the analyzed faunal assemblage

Preservation of the samples was relatively good as most bones showed little wear or decay. The evaluation of wear stages was modeled after Behrensmeyer (1978). Most specimens are in moderate wear, and the hearth sample shows particular consistency across loci (50% to 80% of specimens in moderate wear). Large mammals, including cattle, appear more weathered than sheep/goat and the small mammals. Although this pattern may coincide with a higher percentage of gnawing in the large mammals, most of the gnawed large mammal and cattle fragments do not show a high degree of weathering. Most of the heavily gnawed and heavily weathered bones belong to sheep/goat and small mammals. Variation in the depositional treatment of different species could have created this pattern, or perhaps, sheep/goat remains were more available to carnivores. The total assemblage shows little indication of extreme trampling or fragmentation (most fragments are 4-5cm in length).

After taking indeterminates out of consideration, the proportion of species present in the total assemblage suggests a reliance on domesticated sheep/goat (37%), cattle (12%), and to a much lesser degree pig (4% [figure 17]). The combination of small ruminants, cattle and pig is a common pattern of animal management in the post-Neolithic Near East. There are also a few rarer undomesticated species represented in these samples, which suggests some reliance on wild resources.

### *The Hearth Sample*

The species representation from this sample tracks the visible trend in the total analyzed assemblage (Table 3a). Without considering indeterminates, sheep and goat comprise slightly less than half the total identified specimens, while cattle are the second most represented animal (20%). Pigs (2%) are only slightly more prevalent than the other represented species. The distribution of these three key species varies slightly by context. Most of the pig remains (75%) originated from the hearth surface (locus 5225), while cattle bones occurred primarily in the debris overlying the work surface (locus 5226). The proportion of sheep and goat within all the loci, however, is roughly equivalent (41% to 58%).

Species	TNF	%
<i>Bos taurus</i>	34	11.37
<i>Capra hircus</i>	0	0
<i>Canis sp.</i>	1	0.33
<i>Cervus elaphus</i>	3	1.00
<i>Ovis aries</i>	1	0.33
<i>Ovis/Capra</i>	74	24.75
<i>Sus sp.</i>	4	1.34
<i>Testudo sp.</i>	1	0.33
fish	0	0
small mammal	35	11.71
medium mammal	8	2.68
large animal	10	3.34
indeterminate	128	42.81
<b>Total</b>	<b>299</b>	<b>100.00</b>

Table 3a: Species list from the hearth sample (loci 5225-5228).

An age estimate based on epiphyseal fusion and tooth eruption was given for each specimen where appropriate (Bökönyi 1972; Silver 1969). The age range at which fusion or eruption occurs varies within and between populations and can be influenced by nutrition, sex and environment. In order to avoid these problems, we grouped the data into three broad categories (juvenile, subadult and adult), which reflect phases in the animal's life. Even at this level of abstraction, many of the samples were in an ambiguous intermediate phase. For example, the scapula and pelvis fuse very early in development, and a fused scapular element will not provide high resolution age data. The resulting sample (24 specimens, 14% of total identified) is very small and can only give a rough approximation. Due to the small sample size, this discussion is restricted to sheep/goat remains. Juvenile and subadult animals are equally represented, and the sample shows a general prevalence for adult animals. No extremely infantile animals were present, and it is possible that preservation issues influenced the representation of young animals. All the juvenile bones appear in the area surrounding the hearth, while the other age classes are equally divided between the work surface and the overlying debris.

The age data from this sample may provide evidence that animals, especially young, were kept near the settlement. It is possible that vulnerable young animals were managed onsite for protection. It is also possible to interpret this data in terms of food preferences and culinary practices. These are issues that will be examined in greater depth after more data have been analyzed. This assemblage includes a significant number of teeth, and we hope to gain more accurate ageing data for the entire Ubaid assemblage by analyzing these remains using tooth wear stages (Payne 1973).

Although it is impossible to appreciate the extent to which fishing or hunting may have contributed to the diet or economy of Kenan Tepe's Ubaid inhabitants, the presence of nondomestic species allows limited inferences. There are three red deer (*Cervus elaphus*) fragments (figure 18 A) within the analyzed sample. These are all from a single individual and represent a complete right metatarsal. The plastron of a turtle (*Testudo sp.*)

was also identified. Although there is no evidence for processing on these elements, they reveal other potential resources available to the early Ubaid settlement.

The presence of a radial shaft from a medium-sized canid (*Canis sp.*) provides direct evidence for the presence of dogs at the Ubaid settlement. However, it is likely that dogs and other carnivores were far more common than most faunal assemblages suggest. Gnaw marks and gastric etching are an indirect, though often very visible, indication of the presence of dogs on site (figure 18 B). The occurrence of carnivore gnawing in this sample is relatively rare, occurring on only six fragments. All size categories are represented amongst the gnawed bones. Although the sample is too small to arrive at anything more than working hypotheses, over half the gnawed bones are from the animal's forequarters (humeri, radius and ulna). This may represent differential discard patterns between different elements and species. This evidence indicates that dogs had access to this area and played a role in the deposition and preservation of faunal elements.

Most of the specimens in this sample could be identified to skeletal element, although 39% were indeterminate. After taking the indeterminate portion out of consideration, over half of the sample is composed of cranial and teeth elements (Table 4a). The representation of other skeletal elements is considerably lower, although these elements appear in roughly equivalent frequencies (1% to 6%). The only deviation from this pattern is in the work area surrounding the hearth (locus 5228). In this location, there are fewer element types present, and metapodia (11%) and vertebrae (9%) appear more frequently. Depending on factors of preservation, this may represent food processing techniques or discard patterning in the vicinity of the hearth.

There is also some variation in the element representation between species (Table 4a). The three main species (sheep/goat, cattle and pig) are dominated by cranial elements. Cattle are minimally represented by other elements, and there is a complete lack of hindquarter elements. Sheep/goat, however, are equally represented by both fore and hindquarter elements and have a much lower occurrence of axial elements. Pig is exclusively represented by cranial and forequarter elements, although the spread is much more even if the medium mammal elements are taken into consideration. It is likely that species were being treated differently in terms of butchery and consumption practices. While the meaty limb elements of sheep/goat were processed or discarded in this area, the cattle elements show a different pattern, focusing instead on the head, spine and feet.

The only direct evidence for human modification comes from three fragments with distinct cut marks. The specimens include an ilium/ischium from a male sheep/goat, a sheep/goat scapula and a sheep/goat ulna (figure 18 C). The placement of the marks (along the acetabulum, on the neck of the scapula and on the olecranon) on these elements is suggestive of the disarticulation process. This indicates that butchery activities or the disposal of butchery or cooking debris occurred in this area.

There is only a single burnt fragment in the sample. It is a calcined (bluish black color) long bone of a small mammal. It most likely represents cleaning debris from the use of the hearth. The lack of burnt bones in the assemblage clearly reveals that the presence of a hearth does not necessarily correspond to cooking debris. In fact, due to the impalpability of charred bone, heavy burning in a faunal assemblage rarely represents cooking behavior. The absence of burning may instead suggest that cooking refuse was

disposed of elsewhere, cooking techniques focused on boiling or that this particular hearth was not used for the preparation of animal food.

### *The Fill Sample*

The species recorded in this sample were primarily domesticated sheep/goat (21.08%), cattle (3.61%) and pig (3.92% [Table 3b]). In addition, the vertebral centrum from a large fish (figure 18 D) and an almost complete dog ulna (*Canis sp.*) were recorded. The dog ulna came from a medium-sized animal.

Species	TNF	%
<i>Bos taurus</i>	12	3.61
<i>Capra hircus</i>	2	0.60
<i>Canis sp.</i>	1	0.30
<i>Cervus elaphus</i>	0	0
<i>Ovis aries</i>	2	0.60
<i>Ovis/Capra</i>	66	19.88
<i>Sus sp.</i>	13	3.92
<i>Testudo sp.</i>	0	0
fish	4	1.20
small mammal	73	21.98
medium mammal	7	2.12
large animal	41	12.35
indeterminate	111	33.43
<b>Total</b>	<b>332</b>	<b>100.00</b>

Table 3b: Species list for the fill sample (locus 5220)

During the recording phase, a wide variation in the size of cattle bones from this sample was noted. These differences could be attributed to age or sex. Age information was derived for the specimens identified as cattle and sheep/goat using fusion and eruption data. To address the size differences in the cattle bones, body size criteria were used to verify/evaluate age data. The determination of body size is not a straightforward process, but it can be a valuable complement to age data. Measurements were taken according to von den Driesch (1978), but the sample is too small to provide useful data. For preliminary purposes, the relative body size of bones identified to element and species was utilized instead. The body size of a specimen was determined to be small, medium or large in comparison with similar speciable elements throughout the entire assemblage.

Cattle bones were distributed between medium and large body sizes. In terms of age, at least 25% of the specimens were juveniles and 25% were subadults. The presence of a large juvenile and several small subadults suggests that the body size of the cattle does not necessarily correlate with age. Size differences may instead be related to sexual dimorphism, and it is possible that with larger samples we will be able to better explain the size differences within the cattle population. In the sheep/goat category, there were at least two adult animals and one juvenile animal. Sheep/goat ages seem to correlate well with estimated body sizes. The juvenile animal was recorded as small, and the adult animals were mostly medium sized. The pig specimens, none of which offered ageing

data, came from small and medium sized individuals. The small class was significantly smaller in comparison with the medium class.

Most of the identified fragments were from either long bones or cranial elements (Table 4b). Long bones comprised 41% of all the fragments identified to skeletal part, and cranial fragments represented 40%. Ribs, vertebrae, carpal/tarsal, pelvis and scapula fragments altogether made up 20% of the skeletal parts identified. Ribs, vertebrae, pelvis and scapula may be missing due to poor preservation. However, carpals and tarsals, which are much denser bones, are unexpectedly rare. Heavy carnivore activity might have caused this trend. The frequency of meat-bearing body parts is quite high, and the most frequently identified long bones were humeri (20% of all long bones identified to element). Radii and femora were quite frequent as well (18% and 16% respectively of all long bones identified to element). The relative frequency of the metapodia was also significant at 13%, and these elements were more frequent than tibia and ulna fragments. The relatively high frequency of metapodia may mean either that animals were butchered in the area or that the entire skeleton was used by the site occupants. Although the presence of small mammal metapodia may be elevated because of their use as bone tools, cow-sized metapodia may suggest food production and consumption. These large mammal metapodia may have been selected for marrow extraction, and the analysis of break patterns for grease extraction is an area of future research.

Elements	Hearth Sample		Fill Sample	
	TNF	%	TNF	%
cranial	63	21.07	48	14.46
teeth	53	17.73	55	16.57
scapula	5	1.67	4	1.20
vertebrate	7	2.34	9	2.71
femur	7	2.34	8	2.41
radius	4	1.33	9	2.71
phalange	3	1.00	6	1.81
carpals/tarpals	2	0.67	9	2.71
humerus	7	2.34	10	3.01
rib	6	2.01	23	6.93
ulna	2	0.67	3	0.90
pelvis	5	1.67	5	1.51
metapodial	11	3.67	13	3.92
tibia	5	1.67	4	1.20
plastron	1	0.33	0	0
long bone indet.	17	5.69	48	14.76
indeterminate	101	33.78	77	23.19
<b>Total</b>	<b>299</b>	<b>100.00</b>	<b>332</b>	<b>100.00</b>

Table 4a: List of identified elements per species from the fill sample.

Species	Cranial <sup>1</sup>		Forequarters <sup>2</sup>		Hindquarters <sup>3</sup>		Axial <sup>4</sup>		Feet <sup>5</sup>		indet.		Total	Total %
	TNF	%	TNF	%	TNF	%	TNF	%	TNF	%	TNF	%		
<i>Bos taurus</i>	26	76.47	2	5.88	0	0.00	1	2.94	3	8.82	2	5.88	34	100
<i>Ovis/Capra</i>	46	61.33	10	13.33	10	13.33	2	2.67	7	9.33	0	0.00	75	100
<i>Sus sp.</i>	3	75.00	1	25.00	0	0.00	0	0.00	0	0.00	0	0.00	4	100
small mammals	17	48.57	2	5.71	5	14.29	4	11.43	1	2.86	6	17.14	35	100
medium mammals	0	0.00	2	25.00	2	25.00	1	12.50	0	0.00	3	37.50	8	100
large mammals	0	0.00	0	0.00	0	0.00	5	50.00	2	20.00	3	30.00	10	100
<b>Totals</b>	<b>92</b>		<b>17</b>		<b>17</b>		<b>13</b>		<b>13</b>		<b>14</b>		<b>166</b>	

<sup>1</sup> includes cranial elements and teeth

<sup>2</sup> includes radius, ulna, humerus and scapula

<sup>3</sup> includes tibia, femur, innominate

<sup>4</sup> includes vertebra, ribs

<sup>5</sup> includes astragalus, calcaneus, carpals/tarsals, metapodials, phalanges

Table 4b: List of identified elements per species from the hearth sample.

The presence of a *Canis sp.* in this sample correlates with the occurrence of gnawing on many of the bones. In most cases, the degree of gnawing is heavy. A larger percentage of the medium and large mammal fragments (including pigs and cattle) appear gnawed as compared with small mammals (including sheep/goat), probably because gnawed bones from small mammals did not preserve. These small mammal bones might have been either digested by dogs or gnawed so heavily that it is impossible to recognize the size or the shape of the fragments. There is no evidence for digested bones in this assemblage, which may suggest that this area was kept clean of fecal matter. Gnawed bones are mostly shaft fragments, rather than epiphyseal ends. It seems that these gnawed shaft fragments are the leftovers, which were discarded after the epiphyseal ends had been broken into smaller pieces or completely digested by dogs/carnivores. Consequently, it is difficult to determine whether the gnawed bones belonged to young or mature animals.

There is slightly more evidence for human modification of bones in this sample than in the hearth sample. Two bone fragments show evidence of being worked, and another was polished into a bone point (figure 18 E). The bone point is a small mammal long bone, possibly a sheep/goat metapodial. The two worked bone fragments are from sheep/goat metatarsals. One of these also has cut marks located near the distal end. In addition to this bone, there are three sheep/goat long bones with cut marks on the distal end and a medium mammal rib with cut marks on its proximal end.

The sample includes a single burnt specimen. It is identified as a radius shaft fragment of a small mammal. It is carbonized (black) on one end, while the opposite end is unburnt. The localization of the burning suggests either unintentional exposure to fire or the roasting of meat while still attached to the bone (Buikstra and Swegle 1989). The fact that no other burnt fragments are present supports the interpretation of cooking or discard patterns proposed above in the discussion of the hearth sample.

### Conclusion

The preliminary analysis of this sample of the Ubaid faunal assemblage from Kenan Tepe provides some interesting insights into the earliest phase of Ubaid occupation at the site. It is clear that the inhabitants relied primarily on domesticated sheep and goat, with a lesser emphasis on domesticated cattle and pigs. Wild taxa, however, represent a further component of the Ubaid subsistence adaptation. Although the proportion of red

deer, turtle and fish is relatively small, the presence of these wild species points toward the exploitation of diverse animal resources from the surrounding environment. Kenan Tepe occupies a position overlooking the Tigris River at the foothills of the Taurus Mountains, and based on the faunal remains, it is likely that the Ubaid inhabitants had access to a wide array of subsistence options. It is possible to envision a community in which caprine herds grazed on surrounding pastures, while cattle and pig, which were well suited to the site's environment, served as a valuable secondary food source. Wild taxa and riverine resources provided a further supplement to the Ubaid diet in this early period. To better understand the utilization of wild resources at Ubaid Kenan Tepe, a coordinated analysis of microfauna extracted from samples of floors and from flotation samples and groundstone fishing weights will attempt to clarify the role of fishing in the community's subsistence adaptation.

On the small scale, the comparison of the different contexts within the initial level of Ubaid occupation has provided a means of examining variation within a single phase. In general, the two subsamples share the same basic pattern of species and element distribution. Although human use of this space might have changed over time, there is no indication for a change in subsistence practices. Much of the differences between the two samples can be attributed to taphonomic processes, and it seems that the fill sample was subject to greater fragmentation and weathering. This has implications for how clean the area was kept during the accumulation of the fill as well as for how long bones were exposed to the elements or to carnivores.

The faunal assemblage from the hearth sample reveals some of the activities that may have occurred in this area, and this is particularly valuable given that there appears so far to be no permanent architecture in this phase. As is often stated, many processes can produce the same result, and thus, it is impossible to identify the exact nature of the activities that occurred in the vicinity of the hearth. However, the data suggest that butchery or food processing were carried out in this area. Although it is also possible that this served as a discard area either during the use or the abandonment of the site, the presence of a hearth and associated groundstones supports the interpretation that food-related activities occurred in this vicinity.

Due to the limited sample size the conclusions presented in this section should be considered preliminary. Once the full assemblage of Ubaid bones has been analyzed we will be in a much better position to make more definitive statements about food processing, consumption patterns and animal management strategies at Ubaid Kenan Tepe.

### **An Analysis of the Burials from the 2004 and 2005 Field Seasons**

The following section details the analysis of the skeletal remains from 17 burials excavated during the 2005 field season and one burial excavated during the 2004 field season. These remains were analyzed during the 2006 field season. The burials were recovered from four separate areas of the site and span the era between the Middle Chalcolithic (Ubaid period) and the Early Bronze (ca. 4600 – 2800 BCE). Burial context along with the condition of remains are described below. Where possible, the sex, age, stature and pathologies of each individual are also described. All information on the



skeletal remains was collected following the methods detailed in Buikstra and Ubelaker (1994). The morphological characteristics of the pelvis and cranium were used to determine sex. In juveniles, age was estimated primarily through the dental eruption and development patterns outlined by Ubelaker (1989). These estimates were also supported by observations of epiphyseal union. Due to the poor preservation of many of the skeletons, the age of adults was estimated using cranial suture closure (Lovejoy *et al.* 1985). When no other option remained, dental attrition patterns following the descriptions in White and Folkens (2005) were utilized. Where skeletal preservation allowed, stature was calculated based on equations for white males and females outlined in Trotter (1970) and Ousley (1995). It should be noted that these equations are based on modern populations and are not derived from any population specific to Mesopotamia or Anatolia. They should, therefore, be treated as gross estimates.

#### *Late Chalcolithic/Early Bronze Burials from Area G*

During the 2005 field season five burials were excavated in Area G (figure 3). Four of these burials were recovered from Trench G7 and, based on ceramic parallels, have been dated to between the Late Chalcolithic V (ca. 3400 – 3000 BCE) and Early Bronze 1 (ca. 3000 – 2800 BCE). The four burials uncovered in Trench G7 were all pithos (pot) burials of young children. The fifth burial was recovered in Trench G9. The dating of this burial is uncertain.

#### *Individual G.7.25.5*

Skeleton G.7.25.5 was in relatively good condition. The cranial bones were fragmentary with only the left occipital, right parietal and mandible showing considerable preservation. The post cranium is represented by both clavicles, the left scapula, most of the vertebrae and ribs, as well as the manubrium and both os coxae. In addition some portion of every long bone, other than the right radius, was present and only the left fibula was in poor condition. Several epiphyseal ends were also present.

The age of this individual was assessed from observing the epiphyseal union and dental development. The fusion on neural arches and the fusion of the lateral part of the occipital to the squama provide an absolute lower limit of 2 years whereas the fact that the vertebral bodies had yet to fuse to the neural arches places an upper limit of 6 years. However, based on the occlusion and full development of the deciduous dentition combined with the stage of development of the permanent dentition – the upper first molars and the upper first incisors had just initiated root development – a narrower age range of 3 to 5 years is suggested for this individual.

#### *Individual G.7.28.6*

Skeleton G.7.28.6 was also in relatively good condition. The face and the frontal were absent but the remaining cranial bones and the mandible were well preserved. Both clavicles were present along with the left scapula, both os coxae, and the majority of the ribs (although fragmentary). Only a few vertebrae were present, but all types were represented. As with G.7.25.5 all the long bones were present.

As with G.7.25.5 age was assessed from epiphyseal fusion and dental development. The fusion of the neural arches and the lateral part of the occipital to the squama, combined with the lack of fusion on the neural arches to the vertebral body provided an age range of 2 to 6 years for this individual. Development of the deciduous and permanent dentition, however, narrow this range to 2 to 4 years.

*Individual G.7.38.2*

Individual G.7.38.2 was in poor condition. Few elements were present and only the left femur was well preserved. Some skull fragments were present, as were some elements of the mandible, ribs, a clavicle, vertebrae, the pelvis, a radius, some metatarsals, the left ulna and right femur. Due to the condition of the skeleton, little information other than dental age could be observed. Only the upper right second molar was present from the maxillary dentition, whereas the mandibular dentition was represented by the second right incisor, the right canine and the right second molar. Despite the few teeth present, it was possible to estimate dental age based on the developmental stages of the deciduous dentition and the presence of the permanent incisors in the crypt. Based primarily on the root development of the lower right second molar and the partial eruption of the lower right canine and second incisor, this individual is estimated to have been a young infant between 1 and 2 years of age.

*Individual G.7.41.2*

Individual G.7.41.2 was also in very poor condition. Excavation only uncovered a partial fragment of the mandible, a few cranial fragments, several rib and vertebral fragments, neural arches and centrum, part of a humerus and some epiphyseal ends of the long bones. As with the previous Area G skeletons, age was determined based on dental eruption pattern and epiphyseal union. Dental eruption presents a mixed pattern for age determination. The development of the upper left first and second deciduous molars and the lower right second deciduous incisor suggest an age assignment of 8 to 16 months, whereas the development of the lower right first deciduous incisor and the upper left first permanent incisor suggest an older age assignment of 1 to 2 years. Although the neural arches of several vertebrae had fused, none of these arches had yet to fuse with the vertebral bodies. The fusion of the neural arches occurs between 2 to 4 years, whereas fusion to the centrum begins around 3 years of age. As age of epiphyseal union is more variable more weight was given to the age determined from dental development. Combining this information an age estimation of 1 to 2 years is appropriate for this individual.

*Individual G.9.5.4*

The G.9.5.4 skeleton was discovered oriented with the head to the east facing north. It was tightly flexed, lying on its right side. The right arm was below the body and bent so that the hand came up in front and covered the face. The placement of the hand in front of the face appears to have been deliberate and is a placement that can be observed in other burials.

This individual was relatively complete and in comparatively good condition. The cranium was almost entirely present except for part of the face. Both clavicles were present,

but only part of the left scapula. C1 and C2 were both present, but only a few thoracic vertebrae were recovered and none of the lumbar. Both os coxae were present, although in poor condition. All the long bones were accounted for and in relatively good condition.

Due to the poor preservation of the pelvis, the sex of this individual was determined based only on characteristics of the cranium. The nuchal crest, glabella and mental eminence were all indeterminate, however, both mastoid processes were quite robust as were the supraorbital margins. These observations, in combination with an observed overall robustness of the skeleton, suggest that this individual was a probable male. Based on the pattern of suture closure from the external cranial vault (most of the sutures showed significant or complete closure), an age range of 35 to 65 is appropriate for this individual. Based on cranial suture closure alone it is not possible to narrow this estimate, however, observations of dental wear and attrition suggest that this individual may fall in the later half of this range.

A paleopathological analysis of this individual revealed that all six lower molars were lost ante-mortem. The alveolar bone in this region had been completely remodeled such that no root sockets remain. As the maxilla was not preserved it was not possible to determine if this tooth loss was mirrored in the upper dentition. The teeth that were present all possessed heavy wear and there was an apical abscess present on the buccal alveolar surface of the lower left second premolar. Further, the medial aspect of the right acetabulum showed focal bone destruction with remodeling. No corresponding pathology was observed on the femoral head, although this was in poor condition. Along the margins of the lunate surface there was minor osteophytic lipping. The anterior surface of both patellas exhibited enthesopathies that projected inferiorly. There was also minor osteophytic lipping present around the inferior and superior margins of the vertebral bodies and minor lipping present along the palmar margins of the phalanges of the hand.

The pathological observations are all indicative of an older individual. The loss of all the mandibular molars along with the presence of the apical abscess and dental wear are indications of poor dental health. In addition, the heavy dental wear may speak to a gritty diet that would have exacerbated dental wear. The minor osteophytic lipping present along the margins of the phalanges, vertebrae, acetabulum and on the surface of the patella, all indicate that this individual had a minor case of osteoarthritis.

#### *Late Chalcolithic Burials from Area F*

In the 2005 excavation season nine burials were excavated from Area F, which lies on the northeast side of the main mound. Six of the Area F burials date to the Late Chalcolithic between 3360 and 3020 BCE. The dating of the other three burials is uncertain at this time. A tenth burial discussed here was excavated in 2004 and also belongs to the Late Chalcolithic Period. Five burials are reported from Trench F7.

#### *Late Chalcolithic Burials from Trench F7*

Four of these burials were excavated during the 2005 season at Kenan Tepe, while the fifth comes from the 2004 season. All the burials from Trench 7 are primary interments and can be dated to the Late Chalcolithic.

*Individual F.7.7150.2*

When this individual was excavated the positioning of the long bones suggested a crouched or flexed burial. The skeleton was extremely fragmented and a large degree of reconstruction was required to identify elements. Aside from a few small fragments of the cranium and a part of the mandible, little else was present of the skull. Although most long bones were present only a few were in good condition. The remainder of the post-cranial skeleton was represented only by small fragments of bone.

Due to the fragmentary nature of the skeleton, it was not possible to discern the sex of this individual. However, based on the stages of epiphyseal union of the long bones and dental development it was possible to provide an age range of 15 to 20 years. Both distal ulnar and radial epiphyses were open suggesting that the individual was 18 or younger, whereas the complete fusion of the medial epicondyle of the humerus and the distal end of the right femur would indicate an age older than 15. This estimation agrees with that observed from dental development. The mandibular left third molar is still in the crypt while the maxillary left third molar is still erupting. Based on the dental eruption sequence in Ubelaker (1989), this would indicate an age of 15 to 21. When the two methods are used in concert a conservative age estimate of 15 to 20 years can be assigned to this individual.

*Individual F.7.7200.1*

This skeleton was discovered in a pit, lined on the north, east and south sides by three separate mud bricks. There is little information that can be derived from this individual, due to the very fragmented nature of the remains. The petrous portion of both temporal bones was identifiable along with several teeth, otherwise there were several assorted unidentifiable fragments of the cranium, long bones and vertebrae. Based on the developmental stages of the dentition present it was possible to provide an age estimate of 18 months to 2 years for this individual. It is of note that this is one of the few child burials at Kenan Tepe that was not interred in a pot. However, if indeed the infant was placed in a mud brick lined pit, it is possible that this was a substitute for a pot and that the infant was, culturally, not treated differently than the other child pithos burials.

*Individual F.7.7148.3*

This individual was relatively well preserved. However, the entire lower torso and right arm were missing. Likely the burial was disturbed by later construction that cut through the lower half of the burial. The cranial bones are all accounted for and in good condition. Both clavicles are complete but the scapulae are in poor condition. C1 and C2 are both present along with a few other assorted cervical and thoracic vertebrae. The left arm and hand are fully accounted for and in good condition, however, only a few phalanges represent the right hand. This individual was buried in an extended position on the back with both arms bent at the elbows and the hands resting on the clavicle. The arms were not crossed over the chest but instead were bent directly up to the head with the left hand resting on the left clavicle and the right resting on the right side.

As the pelvis was not present, sex determination was based solely on the skull. Aside from the mastoid processes, which were indeterminate, all characteristics indicated

that this individual was a male. Although the pelvis is not present to support this designation, the fact that the remainder of the appendicular skeleton is very robust supports a sex determination of a probable male. Stature was estimated to have been between 5'5" and 5'11" based separate determinations from the lengths of the humerus, radius and ulna.

Due to the lack of the pelvis, age estimation was based on suture closure patterns. The sutures of the palate ranged from complete to minimal closure and provided a general age range of middle to early adult. The external cranial vault sutures are less certain but appear to concur with the age derived from the palate suggesting an age range of 25 to 40. In support of this determination, the spheno-occipital synchondrosis is fused, which indicates that this individual was at least 25 year old.

Overall this individual is very robust and lacks any observable degenerative changes. All muscle attachments are prominent, and at the attachment for the costoclavicular ligament on both clavicles there is a small rounded pit indicative of heavy muscle usage.

#### *Individual F.7.7221.8*

Individual F.7.7221.8 was discovered in a mud brick lined pit. The skeleton was in a flexed position on its left side oriented east to west and facing south. The right leg and foot were resting on top of the left leg and foot, while the right arm was resting on the left forearm. Also of note, the left hand was positioned so that it rested in front of the face. The skeleton was relatively complete but moderately fragmented. The majority of cranial bones are represented, albeit in fragments, whereas the mandible was well preserved. The post cranial skeleton is represented by the left clavicle and fragments of both scapulae. Both os coxae are present to some degree but only a few unidentifiable fragments of the vertebrae and ribs are present. All of the long bones and both patella are present and in relatively good condition.

In determining the sex of this individual it was possible to use elements of both the pelvis and the skull. On the pelvis, both greater sciatic notches were very wide, a strong female indicator, and the perauricular sulcus along with the left mastoid process and mental eminence of the skull tended toward the female condition. Based on this observed morphological pattern it was concluded that this individual was a probable female. The stature of this individual was likely between 5'2" and 5'6" based on the combined lengths of the femur and tibia.

In order to determine age multiple indicators were examined. The auricular surface of both os coxae had suffered some taphonomic damage, but what was observable presented a youthful pattern, with billowing visible on the surface and margins that was well defined. Examination of epiphyseal union found that while many of the epiphyses had fully fused the left humeral head had only undergone partial union as was the case with the distal tibia. In addition, the epiphyses for the head of the ribs as well as the tubercle had yet to fuse. The sum of these observations leads to an estimation of 15 to 22 years based on epiphyseal union. When dental eruption was observed, the third molar had erupted in the maxilla, but not the mandible. In addition the erupted third molars show no wear at all, indicating a recent eruption. Based on the dental eruption pattern an age of 18

to 21 years would seem likely. When the total morphological pattern is taken into account it is appropriate to estimate this individual's age as between 18 and 22 years of age.

A paleopathological analysis of this individual revealed several areas of abnormal thickness of the cranial vault. The diploe has expanded throughout the posterior portion of the frontal, the medial half of both parietals and the anterior aspect of the occipital. In all regions the diploic expansion has occurred into, but not through, the outer table as there is no observed porosity on the external surface. In some areas expansion of the diploe has also occurred into the inner table. In these regions only a very thin layer of lamellar bone is present. At this time the etiology of this process is uncertain, but will be explored further in later work.

In addition to the biological observations, of potential cultural significance is the presence of a green staining on the left mandibular corpus, the lower left dentition, the internal lamellar bone of the left third metacarpal, several phalanges and the left acromion process. The left maxillary dentition also presents a greenish tinge to the enamel of the teeth. As this burial is from the Chalcolithic it is possible that there was copper or bronze contained within the burial that deteriorated and subsequently stained the bones. Since the body was positioned such that the left hand was either next to or under the head it is possible that the left hand may have contained copper or bronze jewelry, which would account for why only the left hand and left side of the body contained the green staining.

#### *Individual F.7.7104.1*

Although aspects of many elements are present from this individual the informative value of the skeleton is minimal. Many of the elements are highly fragmented and all are covered in a cement-like calcium carbonate that obscures any surface detail. All cranial elements are present, but only the right temporal and parietal are relatively complete. Both scapulae are present but only the right clavicle was recovered. Both os coxae, as well as the rib cage, are represented by only by unsuitable fragments. All long bones are accounted for, but only the left radius is relatively complete.

Due to the condition of the skeleton only a few characteristics of the skull remain to age and sex this individual. Sex was based on the size of the mastoids, supraorbital margin and the mental eminence. Based on the gracility of these features this individual can be classified as a probable female. Stature could only be based on the length of the radius and is estimated to have been between 5'5" and 6'0".

Unfortunately, there are no reliable indicators of age available for this individual. In the absence of standard age indicators dental wear was utilized to provide a general age range. Dental wear is not highly reliable without a reference sample. However, based on the heavy degree of wear on the maxillary and mandibular dentition this individual is likely a middle-aged to older adult. According to the dental attrition pattern present in White and Folkens (2005) this wear pattern would suggest an individual over the age of 40 years. Also of note, the deltoid tuberosity on both humeri and the bicipital tuberosity on the left radius (the right was not observable) are very well developed. This is an indication of well-developed arm musculature. Similar indications have been observed in other individuals at this site.



*Trench F9 Burial*

Only one burial was recovered from trench F9 in the 2005 season. This burial dates from the Late Chalcolithic and was discovered oriented face down. The body was flexed with the arms folded up and the hands placed by the skull.

*Individual F.9.9042.1*

This skeleton was discovered in poor condition and highly fragmented. All cranial elements are accounted for, but none are complete and only the right arm is represented by the long bones, although most of the phalanges for both hands are present, as are the carpals of the left hand.

There are few indicators of sex available. Those present are very robust and strongly expressed indicating that this individual was most likely a male. The left mastoid process is large, the supraorbital margins are very thick and rounded and the mental eminence is square and very prominent. Unfortunately there are no age-related diagnostic elements preserved with this skeleton. Some cranial fragments show signs of open sutures and there is very heavy wear on a majority of the teeth. This suggests that the individual was a middle-aged to old adult.

At the time of death this individual had poor dental health. All teeth have a heavy accumulation of dental calculus and the crowns of both the lower and upper first molars have been completely obliterated by a severe caries. The roots of the upper first molar are also slightly atrophied. There is a large interproximal caries on the lower left first molar. It appears to have originated at the cementum-enamel junction (CEJ) and destroyed much of the interproximal region. Also as mentioned, all teeth contain heavy amounts of wear.

Analysis of the cranial fragments revealed that both the right and left frontal have a large amount of micro- and macro-porosity extending from the orbital margin to approximately three centimeters superior, covering the brow ridges and beyond. There is no sign of reactive bone at the time of death, as all margins are smooth and rounded. Minor amounts of porosity are also observable on the superior surface of the orbits, as is a worm track appearance that may represent healed coalesced foramina. In addition two cranial fragments from the frontal show possible signs of diploic expansion. Neither fragment is excessively thick and one incidence may be occurring near a suture line. In both of these fragments, however, the trabecular bone appears to have expanded into the inner table. Based on these characteristics a general description of porotic hyperostosis and cribra orbitalia is appropriate.

Finally, the posterior aspect of the left distal femur and several carpals and phalanges of both the left and the right hand show arthritic changes. The distal femur presents marked large porosity with coalescence, as well as the presence of surface osteophytes. The phalanges of the hand all present osteophytic lipping of the lateral and medial edges of the plantar surface. The lipping ranges from minor expression along each edge to a more moderate expression with curvature of the spicules. The carpals of the hand also show large degrees of porosity circumferentially on their surface. Most porosity is large (1-2mm) with a substantial amount smaller but still distinctly visible. This pattern of arthritic changes matches most closely with a diagnosis of osteoarthritis.



*Trench F19*

During the 2005 excavation season only one burial was recovered from Trench F-19. It is possible that this was a secondary burial based on the condition of the remains. Unfortunately at this time the dating of the burial is uncertain.

*Individual F.19.4.1*

*F.19.4.1* consisted primarily of the cranium with some fragments of the ribs and vertebrae, along with two tarsals and eight phalanges. The cranial fragments had undergone heavy postmortem damage and only the right parietal was relatively complete. As a result of the poor condition of the remains it was not possible to estimate sex. The left mastoid process was observable and presented a small female morphology. However as this is the only diagnostic character present it is not sufficient to make a determination. Assigning age to this individual was also problematic. Only a few cranial sutures and dental wear were observable. Without further indicators it is only possible to say that this individual was likely a middle-aged to older adult, based on significant closure of the observed sutures and heavy dental wear.

There are two defects present on the skull: one on the anterior aspect of the left parietal, and the other located anterior and medial on the left half of the occipital. The defect on the parietal is quite large measuring almost 5 cm at its maximum width. The defect is roughly square with rounded corners and is a complete removal of the cranial bone at this point. Unfortunately, the surface of the bone is obscured by the deposition of calcium carbonate and at this point the defect is considered the result of taphonomic processes. The defect on the occipital is considerably smaller and only partially penetrates the external table. It is possible that this defect is pathological, but due to the condition of the cranium at present it is considered taphonomic.

As with other older individuals at the site, this individual had poor dental health. All teeth present are worn through to the dentine with several worn down to the root. The upper right second incisor also has a caries that extends from the interproximal region of the canine to cover almost half of the lingual surface.

*Trench F21*

During the 2005 excavation season a single burial was unearthed in Trench 21. This is one of several infant burials at Kenan Tepe. As with the infant burials in Area G, this individual was interred within a pot.

*Individual F.21.6.8*

This individual was highly fragmented with few identifiable elements. The cranium is represented by over 50 fragments and the long bones by over 40. Fortunately, several deciduous and developing permanent teeth were recovered making it possible to age this individual. Based on the developmental stages of the permanent dentition an age determination of 2 to 4 years is appropriate. This determination is supported by the observation that the neural arches of the vertebrae were fused but had yet to fuse to the vertebral bodies.

*Trench 22*

Two individuals were uncovered in Trench 22 during the 2005 excavation season. Both burials were disturbed and the exact temporal context is uncertain. The disturbed context suggests either post-interment disturbance and/or secondary interment.

*F.22.6.1, Individuals 1 and 2*

These individuals were found in two concentrations, one to the west and another to the east. The two crania were discovered lying back to back with Individual 1 facing southeast and Individual 2 facing northwest. The disturbed nature of the burials makes it difficult to be certain of the assignment of some elements, particularly the bones of the hands and the feet. Individual 1 was discovered lying on its back with the legs flexed and the knees turned to the north. Based on excavation notes it appears probable that Individual 1 was interred within a pit and then later Individual 2 was placed on top of Individual 1 disturbing the burial.

Both individuals were in poor condition. The cranium of Individual 1 is only represented by several poorly preserved fragments. There is no mandible present and only fragments of the right clavicle and scapula are present. C1 is complete and there are a few fragments of other vertebrae and the ribs. Both os coxae are represented by small fragments. Other than the left ulna and radius, all the long bones are accounted for, although none are well preserved. Individual 2 is likewise represented by only several cranial fragments, a small part of the mandible, fragments of the left scapula, several rib and vertebrae fragments and parts of all long bones, minus the right ulna.

It is not possible to assign sex to either individual as there are no skeletal elements preserved that can be considered indicative. In addition no long bones are complete enough to attempt a metric estimation. It is possible to provide an age estimation for Individual 1 based on dental eruption pattern and, tentatively, on dental wear. The fact that the upper left third molar is still erupting combined with the pattern of dental wear an age of 16 to 22 could be estimated. However, as both dental wear and third molar eruption time can be highly variable it is only possible to say that Individual 1 represents a young adult. Individual 2, likewise, only has dental wear to rely on as an age indicator. Based on dental wear and attrition Individual 2 likely represents a middle-aged to older adult.

*Ubaid Burials from Areas D and E*

During the 2005 excavation season two burials were recovered from Area D is located on the eastern side of the main mound. Both burials are dated to the Ubaid around 4600 BCE and were discovered in Trench 8.

*Individual D.8.90.1*

The skeleton of individual D.8.90.1 was highly fragmented and the long bones were clearly crushed postmortem. The cranium is fully represented although only the left parietal and temporal are well preserved. The left clavicle is the only bone present for either shoulder and neither os coxae is present. Both the atlas and axis are present, as are

several other fragments of vertebrae and the ribs. All the long bones are present except for the left ulna, although most are represented by small pieces.

Unfortunately, due to the preservation of the skeleton it is not possible to determine sex with any confidence. There are a few features of the cranium that appear gracile and would suggest female but this individual was clearly young and possibly still developing. As a result sex must be considered indeterminate. Age determination was possible utilizing both cranial suture closure and dental eruption. Although the cranium was fragmentary, many of the sutures were well preserved and observable. All observable sutures remain open suggesting that this individual is younger than 18 years. Dental eruption supports this determination. Most of the maxillary dentition was present except for the third molars. The maxilla was damaged at this point and it was not possible to determine if they were present at time of death or if they had yet to erupt. Both second molars were present, but show little to no wear suggesting that they had only recently erupted and that the third molars would still be developing. This pattern would indicate an age of 12 to 18 years. When dental eruption and epiphyseal union are considered an age range of 12 to 18 years is appropriate.

#### *Individual D.8.54.1*

The skeleton of D.8.54.1 was discovered buried within a ceramic vessel under what was likely a floor surface. The skeleton was highly fragmented, particularly the skull, and all bone had deteriorated appreciably. This individual was aged based on dental development and epiphyseal union. Examination of the dentition revealed that only the deciduous incisors had any significant root development and the lower first deciduous molars had just initiated root development. Based on this developmental pattern an age estimate of 3 to 9 months is appropriate. Observation of epiphyseal union supports this determination as there is no evidence of union in any element.

#### *Individual E.2.146.6*

Only one burial has been uncovered from Area E, which is located on the eastern face of the main mound. This burial was excavated during the 2005 excavation season. The burial was discovered in Trench 2 within a large pot, partially in a wall, within a cell room of *Ubaid Structure 3*. The skeleton was fairly complete, but fragmentary and had undergone heavy weathering. The cranium was in good condition but the mandible was fragmented. Both clavicles and scapulae were present as were the majority of the vertebrae. Both os coxae and the sacrum were accounted for although only the right os coxae was in good condition. All long bones, including both patellae, were present and in relatively good condition. The cranium, as well as several long bones, contains several severe areas of erosion.

Due to the relative completeness of the skeleton it was possible to base sex on characteristics of both the pelvis and the cranium. The greater sciatic notch was very wide and the preauricular sulcus on the left innominate was deep and wide. Overall the skull was gracile with a minimal expression of the nuchal crest, glabella and small mastoid processes. The supra-orbital margins were also narrow and sharp. The combination of both pelvic and cranial characteristics indicates that this individual was female. Based on

the length of the femur, tibia and fibula this individual is estimated to have been between 4'8" and 5'1".

It was possible to age this individual from both the auricular surface and suture closure. Both auricular surfaces retain some billowing and have well defined margins. Microporosity is present on both surfaces. The overall morphological pattern suggests a placement of phase 3 to 4 based on the scoring system by Lovejoy *et al.* (1985), which corresponds to an age range of 30 to 39 years old. There are not enough sutures preserved to provide an actual age estimation. However, the sutures present and observable show minimal to no closure. These observations support an age estimate of younger to middle-aged adult. Based on these observations this individual was likely 30 to 40 years old at the time of death.

As with many of the recovered burials the dental health of this individual was fairly poor. The teeth are heavily worn and there is a large interproximal caries on the upper left third molar at the CEJ. The upper left third premolar has a caries on the tip of the labial cusp and the lower right third molar has a large occlusal caries on the distal-lingual aspect. Also of note, on the medial inferior surface of the left clavicle, there is an oval lytic defect at the attachment site of the costoclavicular ligament. The defect extends from the posterior corner towards the anterior boarder on an angle. The placement of this defect is consistent with well-developed musculature. This type of defect is similar in function to a well-developed area of muscle attachment. Rather than expanding the area of muscle attachment by bone growth, the attachment area has been extended by encroachment within the bone.

## Summary

This report described the 17 burials excavated during the 2005 excavation season at Kenan Tepe, along with one burial excavated in 2004 (Table 5). Burials were recovered from four separate areas around the main mound: 5 from Area G, 10 from Area F (including the 2004 burial), 2 from Area D and 1 from Area E. The burials span the time from the Early Bronze to the Ubaid. Overall the analysis found several instances of poor dental health, arthritic changes in two older individuals, an individual with an irregularly thick cranium and an instance of porotic hyperostosis and cribra orbitalia. In addition, several individuals showed evidence of well-developed upper body musculature. Of the 18 burials 7 were of infants or young children. Regardless of time period all the children were interred within pots, except for one that was buried in a mud brick lined pit. In contrast, the adults were generally buried in a flexed position with the hands placed near or in front of the face. Future research will explore in more detail the health and burial practices at Kenan Tepe.

<b>Skeleton</b>	<b>Time Period*</b>	<b>Sex</b>	<b>Age</b>	<b>Stature</b>	<b>Burial Context</b>
G.7.25.5	LC/EB	?	3-5 years	?	Pot
G.7.28.6	LC/EB	?	2-4 years	?	Pot
G.7.38.2	LC/EB	?	1-2 years	?	Pot
G.7.41.2	LC/EB	?	1-2 years	?	Pot
G.9.5.4	?	male	38-64 years	?	Flexed
F.7.7150.2	LC5	?	15-20 years	?	Flexed
F.7.7200.1	LC5	?	1.5-2 years	?	Mud brick pit
F.7.7221.8	LC5	female	18-22 years	5'2"-5'6"	Flexed
F.7.7104.1	LC5	female	Mid-old adult	5'5"-6'0"	?
F.7.7148.3	LC5	male	25-40 years	5'5"-5'11"	Arms bent
F.9.9042.1	LC5	male	Mid-old adult	?	Flexed
F.19.4.1	?	?	Mid-old adult	?	?
F.21.6.8	LC5	?	2-4	?	Pot
F.22.6.1 (1)	?	?	Young adult	?	Flexed
F.22.6.1 (2)	?	?	Mid-old adult	?	Disturbed
D.8.90.1	UB	?	12-18	?	?
D.8.54.1	UB	?	3-9 months	?	Pot
E.2.146.6	UB	female	30-40 years	4'8"-5'1"	Pot

\*EB = Early Bronze (3000-2800 BCE), LC = Late Chalcolithic (3600-3000 BCE),  
LC5 = Late Chalcolithic Phase 5 (3360-3020 BCE), UB = Ubaid (4600 BCE)

Table 5. Burials from the 2004/2005 excavation season at Kenan Tepe.

### The Remote Sensing Survey

The goal of the 2005 season's remote sensing work was to complete coverage of most of the site with gradiometry, to resample some of the grids collected during the 2004 field season at a higher resolution (16 samples per meter instead of 8), and to conduct a resistivity survey on the western side of the tell and in selected spots in the lower town. During the course of the 2005 field season, UTARP team members covered a total of 14 new 20 by 20 meter grids and resampled eight 20 by 20 meter grids with gradiometry. We also surveyed 11 new 20 by 20 meter grids with resistivity. The total area surveyed with gradiometry is now 8800 square meters. Another 4400 square meters were surveyed using resistivity. This coverage is equivalent to 1.32 hectares.

The high resolution recoverage of two gradiometry grids showed no substantial differences from the 2004 data, so high resolution coverage was not continued. Resistivity recoverage of four gradiometry grids in the lower town yielded results that mostly mirror the gradiometry data. For this reason, we did not continue with resistivity in this area. Instead we focused on the western side of Kenan Tepe's main mound where the resistivity provided improved resolution of an apparent circuit wall first discovered in trench C5 and additionally exposed in trench C6 after gradiometry revealed its northeastward course.

### Collection Conditions

During the data collection the weather was generally hot but varied from moist to dry. Due to unusual early June rainstorms, field conditions for the first few days of

resistivity included topsoil soft enough to be easily penetrated by the probes. However the last few grids became increasingly hard and we ultimately suspended resistivity work due to ground hardness. Gradiometry continued under hot and dry conditions. Dry grass and scrub brush created some obstacles to data collection but these plants were much smaller than during the 2004 season because we started earlier in the year before they had time to grow to large size.

### *Interpretive Difficulties*

Time and resources did not permit ground truthing of the new remote sensing data during the 2005 season. Without additional ground truthing trenches, it is impossible to determine exactly what the various signals in the data indicate. Nevertheless, the new data do allow new and interesting observations that add significantly to our understanding of the remote sensing data from previous seasons. These observations are presented in the following two subsections.

### *Gradiometry Results*

The new gradiometry results are similar to those from the 2004 season. The new work connects the gradiometry data from Area F to the western side of the high mound at Area C (Figure 19). In the new data we see additional dark linear features in the lower town, which we interpreted in our report of the 2004 season as potential pathways or geological features (Figure 20 [Parker et al. 2006:102]). A linear feature on the western slopes of the high mound corresponds in part to a circuit wall exposed in trenches C5 and C6. The new data show signals corresponding to this wall continuing and wrapping around the high mound to the southeast. To the south, signals corresponding to the probable western or outer face of this wall extend to a possible corner in grid block e455 n570 before turning southeast (Figure 21). The inner face of the wall is marked by a bipolar black/white contrast between the bricks and the clay fill to the east of the wall. This bipolar signal is seen in grid blocks e475 n590 to e495 n590. The white signal corresponding to the clay seems to curve southeast in grid block e475 n570. If these inner/outer face signals are correctly interpreted, then the wall is up to 5 to 10 m wide. During the 2004 season, trench C6 extended for several meters east to west but did not locate the western face of the wall, indicating that it is indeed at least several meters wide.

### *Resistivity Results*

The resistivity data in the lower town mirrored the results of the gradiometry (Figure 22). In four grids in Area F to G, the data show a light colored square feature at the northeast edge of Area F, and parts of winding linear features marked by dark signals. On the western side of the main mound the resistivity data gives a nice view of the circuit wall. The relatively raw data shows a wide, light feature that curves on its inner, eastern face, but with an outer or western face that runs southwest to a corner in grid block e475n570 (Figure 23). After additional processing and filtering, the feature becomes less clear in some respects but its eastern face attains a bright white appearance (Figure 24). Based on trench C5, this white line corresponds to the interface between the brick wall and the clay fill to the east of the wall. This white line suggests that the eastern face of the

wall curves to the southeast while the western face corners as described above. The wall's path to the northeast is not as clear. The inner and outer faces of the wall seem to continue into grid blocks e495 n610 and e515 n610 and perhaps curve to the southeast at this juncture. There is a possible break in the wall in the middle of grid block e495 n610. If this break is genuine then perhaps it represents a gate.

A single resistivity grid block at e535 n570 revealed a probable wall cornering in the southwestern quadrant of the block, and a round anomaly in the northeast quadrant of the grid (Figure 25). Based on findings in adjacent Areas A and B trenches in previous seasons, the linear signal is likely a fieldstone wall dating to the early Iron Age. The round signal may be a pile of stones or pottery, or a pit filled with dense material.

### **Preliminary Synthesis and Conclusions**

Data gathered during the 2005 field season and analyzed during the 2006 season suggest that Kenan Tepe's Ubaid period settlement was restricted to the eastern portion of Kenan Tepe's high mound (Areas D, E and the lower portion of our step trench in Area A [figure 3]). Excavations in Area I suggest that Kenan Tepe's Ubaid period settlement does not extend under Kenan Tepe's high mound. Given these data we suggest that Kenan Tepe's Ubaid period settlement was less than 1 hectare.

Excavations during the 2005 field season also gave us data about the chronology of Ubaid period settlement at Kenan Tepe. To begin with, excavations in trench D5 did not unearth architecture predating our *Ubaid Structure 1*. Excavations did, however, uncover a large amount of cultural debris, and several hearths were excavated well below the level of *Ubaid Structure 1*. Thus we are not in a position to say that there was any architecture earlier than *Ubaid Structure 1*, but we can conclude that there was earlier occupation. Whether or not this represents non-sedentary use of the site is impossible to say at this point. Another major issue is the latest Ubaid occupation. As outlined above, we definitely have two superimposed structures in area D. In addition to this, we have some indications that at least one of the rooms in *Ubaid Structure 2* may have been filled in with mud bricks, presumably for the construction of a later building.

From these data we can propose a tentative outline of the Ubaid period occupation at Kenan Tepe. This outline consists of four phases. The earliest phase (phase 1) is thus far restricted to the lowest levels in trench D5. These remains consist of hearths and other cultural debris. Thus far no architecture dating to phase 1 has been recovered. Our second phase includes *Ubaid Structure 1* (which was partially excavated in trench D5 during the 2001 and 2002 field seasons and which was further exposed in trench D8 during the 2005 field season). Associated with phase 2 is the outside work surface excavated in trench D5 and described in detail in Parker and Dodd 2005. Artifacts from this surface show that many domestic activities, including fishing, grain processing and weaving, took place in and around this structure. Phase 3 consists of *Ubaid Structure 2* and associated contexts. This is by far our most extensive Ubaid period exposure. It measures nearly 15 meters by 5 meters and includes what we interpret to be a number of storage rooms and at least one large outside surface. Our final phase, phase 4, is only inferred from the possible filling of part of *Ubaid Structure 2*. If this phase does in fact exist then we are likely to find it upslope



from trenches D8 and D10. Any remains from this phase that may have existed in trenches D8 and D10 are undoubtedly eroded away. We are not yet in the position to say what the depth of time is between these phases. Nor can we say where in this provisional framework the architecture in E2 belongs. These will have to remain questions for future research.

The fact that we have now excavated parts of three structures with nearly identical cell floor plans suggests that this type of construction was common during the Ubaid period at the site and perhaps even in the region. This hypothesis is strongly supported by parallels, in both construction and in concept, in Syria and the Hatay region of southern Turkey.

The two Ubaid burials excavated during the 2005 field season and analyzed during the 2006 field season bring up several important issues. First, it is clear that the inhabitants of Kenan Tepe utilized both primary and secondary burial techniques during the Ubaid period. Whether or not the use of secondary burials reflects a less-sedentary segment of the population is at this point impossible to say. Second, both of the excavated burials were likely deposited during the construction of the buildings in which they were found. Clearly the inhabitants of these structures wanted to be close to the deceased and may even have seen this type of burial as a way of establishing a kind of spiritual ownership of space.

Although the analysis of the Ubaid faunal material is only partially complete, interesting observations can be drawn from the data compiled thus far. To begin with, it is clear that the earliest (phase 1) inhabitants of the site relied on a variety of domesticated animals for their subsistence including, first and foremost, sheep and goats, and to a lesser extent, cattle and pigs. The clustering of young and subadult sheep and goat remains in the hearth sample suggests that butchering was carried out in that area. The fact that a number of bones in the sample showed evidence of gnawing combined with the discovery of dog bones suggests that the symbiotic relationship between humans and dogs was well established at Kenan Tepe during the Ubaid period. Although domesticated species make up the majority of the sample, the inhabitants of the Ubaid village also utilized wild resources, especially fish, but probably also deer and other terrestrial animals.

The archaeological data uncovered in Area F during the 2005 season and analyzed during the 2006 season suggest a long duration of continuous local Late Chalcolithic occupation and rebuilding in the lower town of Kenan Tepe. This is most apparent in trench F7 where UTARP team members excavated five consecutive phases of architecture with mud plastered and compacted pebble surfaces whose debris – including loom weights, spindle whorls, animal figurines, grinding stone fragments, beads, andirons, and small bone needles – suggest domestic use of this area over time. We have yet to find any concrete evidence for large-scale commercial production or consumption in Area F, despite the occurrence of many large and deep pits containing heavy amounts of ash. Most likely, this is debris from fires that overtook Level 4 occupations in both the northern and southern sectors of Area F, as evidenced by burning and a wall collapse in F1 and heavy burning in F7.

Relatively large structures with 1 to 1.5 m thick mud brick plastered walls in trenches F19, F20, F22 and F2 indicate the first large-scale buildings uncovered in this area. Most previous constructions were flimsy 50 cm wide walls lacking stone foundations and any real definition as a building or room. Items such as cylinder seals

with geometric and floral motifs along with bronze pins are perhaps indicators of some social status or hierarchy. The freestanding, brick-lined burial of an adult female certainly suggests special treatment, as no other Late Chalcolithic burials such as this have been found at the site.

The lack of any characteristic Uruk materials – such as beveled rim bowls, drooping spouted bottles, and reserve slipped wares or nose-lugged jars – at Kenan Tepe is intriguing as the site lies along a major north-south corridor for movement of goods between the Taurus foothills and important downstream polities like Nineveh and Tepe Gawra. This perhaps validates the notion that Nineveh, located at the northern-most point along the Tigris where navigation downstream is feasible, served as the hub for major east-west overland routes across northern Syria to reach the Euphrates (Algaze 1986: 130; Sørensen 1986: 15).

### **Small Finds**

During the 2004 and 2005 excavation seasons several interesting small finds were recovered from all areas of the site. A sampling of many of these finds, which were processed during the 2005 and 2006 field seasons, are presented here. The goal of this section is to explore how the most interesting objects fit into the overall lifeways at Kenan Tepe. Thus, artifacts are examined in categories related to use, rather than material. Because of this organization, artifact types, such as spindle whorls, are separated into the relevant time periods, and discussed with other spinning and weaving related artifacts. This results in a more comprehensive format for those interested in the artifacts as they existed in collections in time. Each represented time period has a different configuration of artifact types. The small finds emanating from Ubaid contexts are primarily related to spinning and weaving, but there is one example of a hunting tool. The two Chalcolithic small finds included in this report are a pot stand and a fragment of a stone cup, both of which are related to food preparation and consumption practices. The Early Bronze Age is represented by a number of artifacts whose function ranges from ornamentation and cooking, to possible mnemonic devices. The single Middle Bronze Age artifact presented here is related to spinning and weaving activities. Our final category for the small finds are those that cannot be assigned to a specific time period. This collection includes a possible food preparation implement, a general tool, an ornament and a cache of over 100 rock crystal, stone and bone beads.

#### *The Ubaid period*

The Ubaid artifacts described in this section are implements used during spinning and weaving and hunting (Figure 26). Representing the spinning and weaving activities, three spindle whorls discussed here have interesting impressed and incised decorations. Both the D.8.58.12 and D.10.30.8 spindle whorls are decorated on their bases with “pin prick” marks, while the E.2.18.11 spindle whorl has small vertical incised lines around its circumference. The first pin prick spindle whorl (D.8.58.12) is conical in shape with its base decorated with three roughly concentric circles of pin pricks around the center hole (Figure 26A). The ceramic fabric is chaff tempered and there is evident wear and damage

around the lip of the hole. The spindle whorl weighs 12g and has a diameter of 3.25cm and height of 1.8cm. The diameter of the suspension hole is 0.7 cm. This artifact was recovered from a large pit in an Ubaid context that also contained animal bone and pot sherds, refuse of food preparation.

The second pin prick spindle whorl (D.10.30.8) is lentoid in shape, with three concentric rings of punched holes decorating one face (Figure 26B). Due to the shape of the artifact, it is not clear which face was to be the top or the bottom. The distances between the punched holes, as well as between the rings, are irregular. The spindle whorl weighs 9.65g and has a diameter of 2.7cm and a thickness of 1.5cm. The diameter of the suspension hole is 0.45 cm.

The third ceramic spindle whorl discussed here is E.2.18.11 (Figure 26C). This hand-formed lentoid spindle whorl is decorated with a series of notches around its circumference. A break cuts away one part of the disk, and a chip eliminates a few of the notched decorations. The center hole has a pronounced lip at one opening, but a combination of chipping and wear has reduced its sharpness. The thickness of the whorl is variable. There is also evidence of burning on the surface, most likely related to production. The spindle whorl weighs 11g and has a diameter of 3.4cm with its thickness varying from 0.7 to 1.4 cm. The diameter of the suspension hole is 0.6 cm.

The final spinning/weaving artifact for the Ubaid is a bone spindle-whorl/loom weight (E.2.65.16 [Figure 26D]). This artifact is created out of trabecular bone from the head of a femur or humerus. The designation of this artifact was difficult because its shape is characteristic with what we have designated as spindle whorls in the past, but the material is distinctive. Further, larger objects (this object is twice the size of what is normally described as a spindle whorl), are generally designated as a loom weights based on size. However, this object is made out of light, trabecular bone, and while heavier than the smaller ceramic spindle whorls, it is not quite as heavy as loom weights tend to be. The artifact is circular with a truncated, conical shape. The shape and surfaces are very regular, and minimal evidence of wear is present. A small area on the bottom surface of the artifact is damaged. The artifact weighs 19.65 g and ranges in diameter from 2.7 to 4.6 cm with a thickness of 1.6cm. The diameter of the suspension hole is 1.0 cm.

The last artifact from the Ubaid period to be discussed is a hunting tool. D.5.5190.27 is a small, stemmed projectile point that was fashioned out of black obsidian and bifacially flaked. The point was carefully worked and the bottom third is a small stem, probably designed for hafting the point onto a shaft. The point weighs 2.0 g and has a length of 2.5cm by 1.0 cm for width and .35cm for thickness. The diminutive size of this point suggests that it was not hafted onto a large tool such as a spear, but onto something much smaller, such as an arrow, and possibly intended for the hunting of smaller animals, such as birds.

### *Chalcolithic Period*

The Chalcolithic period is represented by two consumption-related artifacts; a stone cup and a ceramic pot stand. The pot stand (F.8.8038.4/5) was repieced from four fragments and is approximately 75% complete, missing two of the supporting arms and a portion of the base. The object is formed by a bell-shaped base merging up into a thick

column with four outstretched “arms” (Figure 26E). The shape of the artifact suggests that it was designed to support an object on top of these arms. The base of the pot stand is flat and circular, tapering up into the main shaft of the column. Just over halfway up the column there is a horizontal hole piercing the column from front to back, with a diameter of 0.8 cm. The top portion of the column is square, and the four arms radiate out evenly from the four corners. The two missing arms are broken where they would join with the column. The extant arms are knob-like in shape with smooth and rounded tips. The depth of the space created by the arms is shallow. The ceramic fabric is coarse and its surface is smooth except for chaff-temper voids. The surface is also somewhat irregular as a result of being handmade. Aside from the aforementioned breakage, there is a chip from the uppermost tip of one of the remaining arms, which also appears to have been burnt. The pot stand probably did not support large vessels, as this would have exceeded the support possible from the four small arms. The object weighs 560 g and has a base diameter of 9.3cm and a neck diameter of 5.0 cm. The approximate height of the artifact including the arms is 13.1 cm. The maximum width between the tips of the arms, based on the two extant examples, is 9.7 cm. The width of the top of the artifact just below the extension of the arms is 6.2 cm. The arms each have an approximate thickness of 3.3 cm.

The next small find belongs either to the Late Chalcolithic period or the Early Bronze Age. Chalcolithic material was found just below this locus, but no date inferences were possible. Therefore, this find was placed in this section at the hinge point between the Chalcolithic period and the Bronze Age. G.7.6.5 is a fragmentary rim from a finely ground stone cup. The cup has a straight rim that tapers from the inner lip towards the base. Even though the fragments do not indicate the shape of the vessel’s base, the existing profile indicates a vessel with flaring walls that could form a conical cup. The stone is dark and has streaks of white running through it in various directions. It also has a fine grain and the fragments have smooth surfaces with a slight sheen. The exterior surface is covered by fine, random, vertical scratches, indicating the soft nature of the stone. The interior surface is largely covered by encrustation, thus covering any internal evidence of use wear. The cup fragments weigh a total of 55 g and have combined measurements of approximately 6 cm in length by a height of 5.3 cm. The thickness of the ground stone vessel varies from 0.45 to 0.5cm. The reconstructed diameter of the vessel at the rim is 9 cm.

#### *Early Bronze Age*

In terms of small finds, the Early Bronze Age is the most well represented of the time periods in this report. The objects recorded here include examples of ornamentation, possible mnemonic devices, a cooking implement, a miniature “vessel,” and two tools (one of chipped stone and one of metal).

The ornamentation artifacts are represented by a shell bead, a bone pendant/tool and two metal pins. The white shell bead (G.7.7.8) is a fragment of a flat spacer bead, consisting of four parallel, conjoined tubes with one finished end preserved. The tubes are formed by grooves cut lengthwise into both the upper and lower surfaces of the rectangular bead. Each tube is perforated lengthwise by a drilled hole. The surfaces and edges have been deliberately flattened, particularly towards the finished end of the bead.

In contrast, at the broken end, the tubes retain a more rounded cross section. Similarly, the sides of the grooves are more angular at the finished end and curved/rounded at the broken end. The object may have been broken during production, thus explaining the differing levels of smoothness at either end of the bead. The natural grain of the material runs parallel to the long axis of the tubes, and in some places the surface is worn smooth to a slight sheen. The bead weighs less than 1.0 g and is 1.2 cm in length with a width of 1 cm. The thickness is 0.27 cm at the widest part of the tubes. Parallels of this artifact can be found in Oates, *et al.* 2001 (figure 473, no. 59[frit]); Oates, *et al.* 1997 (figure 225, nos. 62 and 63 [frit, faience]).

The second ornamentation object is a bone pendant/tool (C.1.1131.40 [Figure 26F]). This bone artifact has been ground and fashioned into a key-shape with a hole through one end, possibly for suspension. The pierced end is circular and tapers toward a point. The point is chipped, however, and the exact shape and sharpness of the artifact cannot be known. The thickness of the object is uniform throughout, but the various surfaces reflect the orientation and shape of the bone. Along its short axis, there is a slight arc from the original bone shape, indicating that this material was taken from the shaft of a long bone, such as a humerus or a femur. The surface is polished smooth. The central hole is drilled asymmetrically, with one side deeper than the other. This indicates that the hole was biconically drilled. The hole indicates that the object could have been suspended, but there was not significant use wear to indicate that this had been the case. The object could also have been used as a tool, such as an awl, to pierce soft materials, such as leather. The artifact weighs 2.1 g, with a length of 3.5 cm and a width ranging from 1.5 to 0.5 cm from shaft to head. Its maximum thickness is 0.55 cm.

The final two Early Bronze Age ornamentation artifacts are two bronze pins, both from burial contexts. (For further information on the burials, see above.) G.7.59.1 is a long bronze pin, measuring 11.7 cm in length (Figure 26G). The head of the pin is formed into a flat fan-shape, and the tip tapers into a fine point that is now corroded. The pin's head measures 1.15 cm in width with a thickness of 0.25 cm. Heavy corrosion covers most of the object, excluding a small part near the head, where a broken section reveals the remaining thin core. Without corrosion, the color of the metal based on a Munsel chart was 2.5YR 5/2 or weak red. The pin weighs 8.1 g and varies in thickness over the pin's body from 0.2 to 0.6 cm.

The second pin was also found in relation to a burial, but from Area F. F.7.7117.7 is a thin bronze pin or needle that has been bent at a 90 degree angle in two places and gradually tapers to a point (Figure 26H). The head of the pin forms a broad, flat eye with a rounded end. The hole of the eye appears as an indentation on one side and does not pierce completely through the metal. The corrosion, perhaps deceptively, appears to be minimal. There are no exposed sections of the actual metal, and a Munsel recording of the surface color was GLEY 1 5/N gray. The pin weighs 3g and if straight would measure 9 cm in length. The width of the head is 0.45 cm with a thickness of 0.25 cm.

To describe an artifact as a mnemonic device can be a difficult task, and it should be stated here that there have been no studies on Kenan Tepe artifacts for this type of use. However, other analyses on these types of worked sherds have been conducted and have theorized about their use as memory tools (Costello 2000, 2002). It is with these studies in

mind that we hypothesize that the following two worked sherd disks could have served a similar function.

The two worked sherd disks were recovered from Early Bronze Age contexts in Area C, on the westernmost side of the mound proper. Of the two, one could be described as a jeton and the second could represent a lid that was later worked as a jeton, or sherd disk. The first worked disk discussed is C.1.1110.6. The fabric of the artifact's body is thick, coarse and micaceous ceramic with fine chaff temper. The disk was shaped by chipping and working a broken sherd from the original vessel into a circular shape. The jeton weighs 80 g with a diameter ranging between 5.4 and 6.0 cm, and a maximum thickness of 2 cm. Preserved on this jeton are four parallel, combed grooves that curve slightly across the object's face. Further, two incised or punched circles are included in the design. The topmost circle is placed on top of the bottommost of the curved lines near the sherd's edge. This indicates that the combed lines were applied first and the circles second as one overlaps the other. The second circle touches, but does not overlap the first, at the disk's lower left-hand side. A third circle may be partially preserved at the lower left of the jeton, but that area of the object is damaged and further observation is difficult. The combined width of the four combed grooves is 1.5 cm and the diameter of the circles is 1.2 cm.

C.1.1120.4 is the second worked ceramic disk. The disk is roughly circular in shape, but only a portion of the edge is round and smooth, the rest is chipped and broken. It is unclear if the chipping was done to shape the sherd for original use (as a lid?), or if the chipping was done after breakage of the original form had occurred. At the center of the "top" of the disk is a small knob of raised clay. If this object was designed as a lid, this knob may have been part of the original design. However, there is no evidence of burning or smoke discoloration on the sherd. Therefore, if it was used as a lid, this was not in conjunction with a cooking vessel or any other vessel used over fire. If, however, this object was not designed as a lid, the "knob" could be a raised design from when this sherd was a part of a larger vessel. As with other jetons (Costello 2000, 2002), it is often the case that special designs or decorations are centered on the worked disk. This could be the case for this artifact. The bottom face has a shallow and incomplete groove running in a circle around the edge of the piece. In combination with the chipping to shape the object, this groove could have been used to guide the breakage in the formation of a disk-shape. The disk weighs 32.25 g and ranges in diameter from 5.5 to 6.3 cm. Its maximum thickness is 5.5 cm. The "knob" has a diameter of 0.9 cm and its height from the surface of the disk is approximately 0.5 cm.

The artifact related to cooking practices during the Early Bronze Age at Kenan Tepe as described here is a ceramic andiron (F.7.7173.14). This object may have helped to support vessels over or in a cooking fire, to support the fire itself, or to assist in keeping the fire contained within the hearth. The andiron was severely damaged during deposition and was recovered in fragments that have for the most part been refitted, although a good amount is missing. The base and top of the artifact are flat, elongated ovals, with a column-shaped body that is ovoid in cross section. The base surface is much rougher than that of the top, though it is unclear if this is related to use or to production. Because it was handmade, the dimensions of the andiron are variable throughout the



body. Similar to the Chalcolithic pot stand (F.8.8038.4/5), this artifact is pierced horizontally through the upper part of its body, from wide face to wide face. The surface around this hole is elevated, possibly to support the object itself around this weaker area. A small, rounded shelf protrudes from the lower part of one of the thinner sides of the column. The andiron weighs 1.18 kg and has a height of 19 cm. The base is 11 cm in length by 5 cm in width. The top of the andiron measures 8.4cm in length with a width of 3.6 cm. The shelf on the narrow side measures 4.3 cm in length with a width of 2.2cm. The diameter of the hole is unclear due to damage to the artifact.

Two Early Bronze Age artifacts are described here as general tools: a lithic blade and a metal wedge or awl. The well-constructed, bifacial chert blade was recovered from an Early Bronze Age context in Area G (Figure 26I). G.7.52.2 is trapezoidal in cross section with three faces on the anterior side and two faces on the posterior. Of the three anterior faces, one edge is significantly broader than the other. The more shallow edge is carefully flaked on the posterior side, the only example of retouching on the blade. Approximately 21 “teeth” have been added to this denticulate edge, creating an exceptionally sharp cutting surface. The lack of retouching on the opposite edge could indicate that this was hafted into a handle. The blade is slightly curved from tip to end due to the shape formed when struck from its core. The Munsel color of the stone registered at 10YR 4/1, Dark Gray. The blade weighs 22.4 g and measures 9.8 cm in length and 2.6 cm in width and has a thickness of 0.75 cm.

The second tool from the Early Bronze Age is C.2.2167.7, a bronze wedge tip. It is unclear what this artifact was used for, but it is wedge-shaped and could have been used for a number of awl (piercing) or chisel (flaking or stripping) activities. At the broken end of the artifact, the cross section is square, but this tapers on two sides into a wedge tip. The artifact appears to have minimal corrosion damage. The color was recorded as GLEY 4/5 G or dark greenish gray. The wedge tip weighs 3.3 g and measures 2.8 cm in length and 0.45 cm in width. The thickness of the artifact varies from 0.2 to 0.5 cm.

The final Early Bronze Age small find to be discussed does not fit easily into any category. F.7.7173.4 is a miniature ceramic “vessel” that resembles a small cup with straight sides and a flat base. There is also a small, straight hole (approximately 0.1 cm) piercing the center of the base. Because of this hole, the vessel may in fact have been an object that was suspended by a cord for ornamentation or decoration, but its actual use is a mystery. The thickness of the walls varies, as it was hand made, and the rim is fairly straight. The artifact weighs 12.2 g and has a height of 2.2 cm. The exterior diameter measured at 2.6 cm with the interior diameter at 1.9 cm. The thickness of the walls approximates to 0.4 cm.

### *Middle Bronze Age*

One Middle Bronze Age small find is a spinning or weaving implement, but unlike the Ubaid examples discussed above, D.8.30.14 is a wagon wheel style spindle whorl (Figure 26J). The interesting characteristic of this spindle whorl or loom weight is that it has a thick “axel” protruding on both sides. The axle joins the horizontal disk in a smooth curve on both faces, and a hole penetrates the center of the axle, with the disk becoming thinner towards its perimeter. This style of spindle whorl, or possibly loom



weight, is different from the general conical or lentoid small spindle whorls often found at the site. This hand-formed ceramic disk shows chaff temper and calcareous inclusions. The artifact weighs 155 g and has a diameter of 8.5 cm. The axle is 4.4cm in length with a diameter of 2.4 cm and the piercing hole has a diameter of 0.6 cm.

The final small find from the 2005 field season is a small ceramic pot filled with metal coils and beads of shell, rock crystal and bone (G.9.19.1). The vessel was recovered from an area of particularly dense fill without any other artifactual or feature context. The vessel was undecorated and no evidence of a lid or possible cover for the vessel was recovered. A brief description of the contents of the vessel follows (Table 6). Two metal coils (G.9.19.1.1-2) found inside the vessel were probably formed from lead or silver, though they are highly corroded. Four ground rock crystal pendants (G.9.19.1.2-5) were also recovered, shaped into roughly teardrop profiles with a small perforation across the top of each for suspension. The four drilled shell beads (G.9.19.1.6-9) appear to have been drilled for stringing or attachment to material rather than for suspension as the rock crystal pendants were. Two tubular or cylindrical drilled shell beads (G.9.19.1.10.1-2) were recovered. Two ground stone beads (G.9.19.1.11-12) of a greenish gray material, probably serpentine, were drilled lengthwise for stringing. A majority (n = 85) of the beads found in the vessel are drilled, disk beads (G.9.19.1.13-20) formed of various shades of rock crystal. Often the edges of these disk beads were chipped and ground for shaping. The colors range from translucent and white varieties through brown and reddish hues. The final bead from this cache is that of G.9.19.1.21, the bone, possibly vertebral, of a small animal that shows evidence of having been suspended through a naturally occurring hole.

KT #	Quantity	Description	Dimensions
1.1-2	2	Broken metal coil, possibly for hair ornamentation. Probably lead or silver. GLEY 1 3/N very dark grey.	D=1.7cm; T=.2cm; H=2cm; WE=2.3g
2-5	4	Ground rock crystal pendants. Translucent with some imperfections. Roughly teardrop-shaped with holes drilled for suspension. Beads range in color from clear transparent to transparent yellow.	2) H=2.6cm; WI=1.35cm; T=.95cm; WE=4g 3) H=2.65cm; WI=1cm; T=1cm; WE=2g 4) H=1.7cm; W=1.05cm; T=0.85cm; WE=2g 5) H=2.05cm; WI=.9cm; T=.6cm; WE=1.9g
6-9	4	Shell beads with hole through top portion of spiral. Allows for horizontal stringing, not suspension. Shells heavily worn and vary in size. 10YR 8/1-2 white to 7/3 pale yellow.	6) H=3.4cm; WI=0.5-2.1cm; WE=7.25g 7) H=1.8cm; WI=0.6-1.4cm; WE=1.8g 8) H=1.35cm; WI=1.3cm; WE=0.8g 9) H=0.7cm; WI=1.3cm; WE=0.3g
10.1-2	2	Cylindrical drilled shell beads. 10YR 8/3 pale yellow 10YR 7/3 pale yellow	1) H=0.85cm; D=0.45cm 2) H=0.8cm Both WE=0.125g, D=0.4 cm
11	1	Cylindrical drilled stone bead, with ends cut diagonally, resembling a parallelogram. Greatest diameter in the center, tapering to both ends. Serpentine. GLEY 1 6/5G greenish gray.	L=2.5cm; WI=0.6-0.85cm; DH=0.35cm; WE=2.75g
12	1	Oval drilled stone bead, with a rounded triangular cross-section. Serpentine. GLEY 6/10GY greenish gray.	L=1.2cm; WI=0.9cm; DH=0.25cm; WE=1.6g

KT #	Quantity	Description	Dimensions
13.1-2	2	Drilled disk beads. Shell. 1) 2.5Y 8/3 pale yellow; 2) 2.5Y 7/1 light gray.	D=0.6 cm; T=0.1cm; WE=0.075g each
14	1	Drilled disk bead. Stone. GLEY 1 4/N dark gray.	D=0.6cm
15	1	Drilled disk bead with irregular surfaces, mottled orange, white and brown stone.	D=0.7cm; T=0.2cm; WE=0.15g
16.1-3	2	Drilled disk beads with irregular surfaces, translucent orange-pink stone. Rock crystal. 7.5YR 6/6 reddish yellow.	1) D=0.7cm; T=0.2cm 2) D=0.6cm; T=0.2cm 3) D=0.6 cm; T=0.25cm; WE=0.1g each
17.1-4	4	Three red drilled disk beads and one matching cylinder bead with varying degrees of regularity in shape. Coral? Stone? 2.5YR 4/6 red.	1) D=0.5cm; T=0.15cm 2) D=0.5cm; T=0.15cm 3) D=0.4cm; T=0.1cm 4) D=0.4 cm; T=0.25cm; WE=0.5g each
18	1	Pink drilled disk bead. Shell? Stone? 2.5YR 6/4 light reddish brown.	D=0.7cm; T=0.25cm; WE=0.1g.
19	10	Orange-red drilled stone beads. Translucent. Rock crystal. 2.5 YR 4/8 red.	D=0.5-0.75cm; T=0.1-0.2cm; WE=0.2g each
20.1-62	62	Translucent rock crystal drilled disk beads. One bead is broken into two pieces.	D=0.4-0.6cm; T=0.1-0.25cm; WE=0.15g each
21	1	Bone pendant. From an animal vertebra with the naturally occurring hole possibly used for suspension. 2.5Y 7/4 pale yellow.	L=2.5 cm; WI=2.5cm; T=1.05 cm; WE=1.95g

D=diameter, DH=diameter of pierced hole; L=length; H=height; T=thickness; WE=weight; WI=width.

Table 6: G.9.19.1 bead cache.

### *Figurines*

The 2004 and 2005 excavation seasons added 19 additional figurines to the Kenan Tepe corpus. These data were analyzed during the 2006 season. The following section will introduce these new figurines in categories based on their associated time period (Figure 27). A fourth category for figurines from insecure contexts is also included.

### *Ubaid Period*

The only Ubaid period figurine found so far is E.2.145.7 (Figure 27A). This figurine originally represented a horned animal, probably a sheep or a goat. The figurine's head broke from its body right at the join with the neck. Further damage is found on the horns, with most of the right horn/ear missing, as well as the top of the left horn/ear and a chip from the tip of the nose. The head measures 3.8 cm in width at the horns and has a maximum height of 3.3 cm. The individual horns are .9cm wide and the head measures 2.85cm deep from nose to back. The break at the neck where the head would have connected to a body is 2 cm in diameter.

The ceramic figurine was carefully made and formed by hand. The left horn curves forward from the head towards the pinched nose. The figurine was also painted in two colors, red-brown and gray. A red-brown collar encircles the neck on the proper right side, but is worn away on the left. Gray paint was used to indicate two eyes, a mouth and a series of small markings on the forehead. These markings continue back on the head until they stop between the horns. The horns and spotted features could represent a sheep,

goat or even a cow. However, due to the reduced snout, this figurine probably represents a spotted sheep or goat.

### *Chalcolithic Period*

Figurines from the second category of figurines recovered during the 2004 and 2005 field seasons (and analyzed in 2006) were found in the lower town area off the mound on the north eastern portion of the site. This area is comprised mainly of Chalcolithic materials and dates roughly to the last half of the 4th millennium BC. All six figurines are ceramic and have sustained at least minor damage. Five of the figurines are either whole or partial animal representations, with the sixth being damaged beyond recognition. Within the general animal category, the majority of these figurines appear to represent either caprids or equids. F.1.1131.4 (Figure 27B) appears to be a representation of a wooly haired caprid, F.7.7162.4 appears to represent a recumbent quadruped that could be either caprid or small equid, and F.7.7139.4 (Figure 27C) could be a stylized equid head. The remaining two animal figurines are too general in characteristics to be applied to any specific animal category, but do seem to represent quadrupedal animals (F.2.2061.25 and F.2.2066.6).

The first of the animal figurines to be discussed is F.1.1131.4, the wooly caprid (Figure 27B). The hand-formed quadruped figurine has a thick and compact body with short and pointy rear legs. This figurine measures 3.2 cm in length by 2.1 cm in width and weighs 12 g. The ceramic fabric is very hard and the object was burned during production. Its head is missing, and the two front legs are broken off at the join with the body. There is pronounced posterior curvature with a stubby tail on top. The neck/chest area of the animal is significantly thick relative to the rest of the body. The back has a gentle curve between the neck and the tail. The majority of the animal's body, excluding the tail, rump and hind legs, is covered with small, irregularly-shaped, impressed dots that could represent either wooly hair or pigmented spots on the animal's coat. On the proper right side there is a clear demarcation where the spots cease just at the hind leg, while on the left, the spots continue towards and past the rear leg. These spots continue onto the animal's underbelly. The overall appearance suggests a rather portly, hairy sheep or goat. Parallels for the surface decoration of this figurine can be found in Oates *et al.* 2001 (figure 489, no. 74).

Figurine F.7.7162.4. appears to best represent a recumbent quadruped, possibly either a caprid or a small equid, such as a donkey. The figurine is mostly complete, with only the tip of the right horn broken. The hand-formed animal consists of a tubular body, with appendages that appear to have been pinched with three fingers while being held upside-down. These four "folded under" legs are formed as small, pulled, ridges of clay running lengthwise on either side of the underbelly. The posterior is the widest part of the figurine's body. After a short neck, the head faces front and was formed by pinching the clay to create a short muzzle. Two horns or ears point up and to the back, forming a wide U-shape when viewed from the front. The figurine measures 4.9cm in length by 2.9cm in width. The posterior is 1.9 cm in width, which is also the width of the horns at their widest part.

The third Chalcolithic animal figurine is F.7.7139.4, a possible horse's head (Figure 27C). This object is handmade of a coarse ceramic fabric with heavy chaff temper. If our interpretation of the figurine as a horse's head is accurate, the form is represented by a long, cylindrical head that extends down into a neck. The posterior portion of the figurine is broken, so further information of the shape is not possible. One side of the head is broken, while the other preserves what may be an ear. At the end of the neck, the right shoulder area is broken, but part of the left shoulder is preserved. When viewed from above, the long, narrow snout expands out at the cheek/forehead area, again mimicking the possible outline of a horse's head. The long snout ends in a short and flattened area that would have been the nose and mouth, but which is not indicated on the figurine. The object measures 8.1 cm in length by 4.6 cm in width, with a maximum height of 5.8 cm.

The remaining three figurines are not easily classified into a taxonomic category. The first of these is F.2.2061.25, a relatively complete, handmade figurine of a quadrupedal animal (Figure 27D). The figurine is approximately 75% complete, missing the front of the torso with two short front legs, and also incurring chips to the tips of the ears/horns and the front of the face. The horizontal body is long and tubular with a slight rise indicating the posterior. The two rear legs are small pinched knobs and not proper appendages. The back slopes up through the thick neck to the head. The face seems to have been pinched together from the head, leaving a flattened area between the ears/horns. There is a pebble inclusion over the right side of the animal's rump and the object was burnt during production. The figurine measures 4.2 cm in length by 1.6 cm in width, with the height at the head approximately 2.8 cm.

Figurine F.2.2066.6 is also that of a quadruped, but only the torso survived antiquity and further designation is not possible. This handmade figurine is missing all four legs and its head. Due to the level of damage, any interpretation of what it might have represented is not possible. Only the rise of the back into the neck and part of the left hip give any shape to the fragment. The surviving portions of the figurine measure 2.6 cm in length with a width of 1.9 cm. The height ranges from 1.3 to 1.9 cm from back to front.

The final Chalcolithic figurine to be discussed here (F.7.7162.6) is also highly damaged and cannot be interpreted as to what it might have represented. At one end there is a small circular surface (partially broken) that forms the end of a shaft. The shaft expands considerably to a globular end with six breaks indicating protruding elements now lost. There is further damage to the figurine body in the form of a long break along this main shaft. The figurine measures 4.4 cm in length and varies in width from 1.5 cm to 3.4 cm.

### *Middle Bronze Age*

The Middle Bronze figurines were all recovered from Area D, on the eastern face of Kenan Tepe's high mound. This period as represented at Kenan Tepe, ranges from approximately 1800-1700 BCE. Area D has produced a large number of figurines, and six more were recovered during the 2004 and 2005 excavation seasons. Of the six figurines, five are of quadrupedal animals and one appears to be a pedestaled foot from a figurine or possibly from a vessel.

The first of these handmade, ceramic figurines is D.10.4.4, representing a sheep (Figure 27E). The figurine is approximately 80% complete, missing both front legs, the tips of the ears, and a chip to the proper right side of its nose. The animal's head is pinched into a sharp muzzle at the front and slopes downward from the ears. The portions of the surviving ears curve forward from the head towards the nose. The animal has a thick, cylindrical torso with a straight, relatively thin belly, and the back arches slightly towards the posterior. The posterior of the animal is relatively flat and it retains a short, down-turned tail. It is the tail shape that differentiates this sheep figurine from that of a goat. Goat tails tend to stand upright while that of a sheep is down-turned. The figurine is 10.3 cm in length with a maximum height at the head of 5.3cm and a maximum width of 4.3cm.

The D.8.2.5 figurine, however, does appear to represent a goat (Figure 27F). The quadruped figurine is hand-formed. This figurine is also approximately 80% complete, but is missing its head and left front leg. Other damage includes chipping at the inside of the right front leg, to the left side of the torso, and to the right rear hoof. The surface is irregular, but there is a slight indication of a ridge running lengthwise along the back towards the head. Most diagnostic about this figurine is again, the tail. A short, pointed tail curls up onto the back of the animal and rests off axis towards the proper left side. This sort of up-turned tail is indicative of a goat rather than a sheep. The belly of the animal is rounded and full, hanging down slightly. The back is arched between neck and tail, and the posterior is also relatively rounded into the rear legs. The maximum dimensions of the figurine are 3.6cm in length, 1.6cm in width and 2.3cm in height.

The third figurine to be discussed here is D.10.11.9, a relatively large ceramic figurine of a quadruped (Figure 27G). The figurine measures 10.7 cm in length with a maximum height of 7.6 cm. It varies in width from 3.7cm in the torso to 5.4 cm at the posterior of the animal. The figurine was damaged and is missing its right leg, as well as its head which is broken at the neck. The body is formed as a relatively slender cylinder with long narrow legs. The rear leg extends down in a straight line while the front left leg curves at a slightly forward angle and then bends down. The left front leg is significantly shorter than the rear leg. The figurine also sports a small tail.

If the D.10.11.9 figurine's missing legs are of the same dimensions as the extant examples, when set down, the figurine would have a distinctive frontward leaning pose. There is not enough of the neck remaining to see if the figurine's head would also match such a gesture. The longer legs suggest that this could have represented a cervid, deer, or equid, but the short tail seems to rule out any species of the horse family. A tentative identification based on the figurine's stature and tail is that it represents a more slender animal, with long legs and a short tail, such as a deer.

The remaining two quadrupedal animal figurines from Middle Bronze Age contexts are both highly damaged, but there is enough surviving material to categorize them as animals and as having four limbs. D.10.6.5 is the smallest of the figurines, measuring 3.8cm in length, 1.7 cm in width and 2.6 cm in height. The figurine was pieced together from two fragments and consists of a relatively narrow torso and a single front leg. For its small size, the figurine was carefully hand formed and appears to have been burnt during production. The only remaining detail of the body is that the belly of the

animal hangs down slightly, but the back is straight. The right front leg is wide in relationship to the rest of the body and splays outwards.

The last animal figurine to be discussed is highly damaged with a good amount of its surface covered in calcareous accretions, covering any distinguishing characteristics that could be present. However, despite these defects, the shape of the D.8.15.4 figurine as a quadrupedal animal is still clear. The hand-formed figurine has a long, cylindrical torso that rises noticeably towards the rear, which is also broken. A long neck extends forward at a gentle angle from the body. The head tilts downward and is formed by pinching the sides, leaving a thin nose and a flat forehead between protruding ears or horns on the side of the head. At the back of the head, behind the ears/horns is a shelf-like protrusion. The tip of the nose, proper right ear/horn, rear/tail, and all four legs are broken. Where not covered with encrustations, the micaceous fabric is marked by air holes, chaff temper, and pebble inclusions up to 0.5 cm. The figurine measures 5.6 cm in length and survives to a height of 3 cm. The body is highly damaged and only survives to a width of 1.6 cm, with the width of the head measured at 1.9 cm.

The final Middle Bronze Age figurine to be examined here is that of a pedestal from a figurine or from a vessel (D.6.72.5). The basic form is a broad, flat-based foot from which extends a rounded belly or vessel basin. The edges of this rounded area are broken, but a small amount of finished surface remains. This finished surface could represent the interior of the vessel basin. However, the most curious element is that this interior area is joined to the exterior side of the leg in one small part over the top. One possibility for the original object would be a multi-footed piece that has a circular basin set into it. The figurine measures 7 cm in height, with the body width at 5.4 cm and a thickness of 4.1 cm. The base of the foot of the figurine/vessel is 4.6 cm in length by 2.7 cm in width.

#### *Figurines from Mixed Contexts*

The following six ceramic figurines come from unclear contexts and cannot be linked to any time period. However, they still hold interesting information for the corpus of Kenan Tepe figurines as a whole and can broaden our understanding of, in this case, faunal iconography and the importance of specific animals and types of animals for the ancient inhabitants.

The first three of the mixed context figurines are all miniature in size, but appear to represent quadrupedal animals. They all have similar builds with compact bodies and short, stubby legs. Figurine D.5.5150.4 is only represented by the rear half of an animal body and has a broken tail (Figure 27H). The torso is thick and tubular, with two very short and stubby rear legs. A straight and relatively thick tail extends horizontally from the posterior of the figurine, but is broken, so the original tail length is uncertain. This figurine is also unusual for the Kenan Tepe collection in that it has an impressed anus just below the tail, measuring 0.35 cm into the body of the figurine. The figurine measures 3 cm in length by 1.6 cm in width. The maximum height is 1.7 cm.

Figurine D.9.4.9 is similar to the above D.5.5150.4 figurine in its compact size and relatively robust body frame relative to its size (Figure 27I). The figurine is approximately 75% complete, missing the neck and head of the animal. The figurine's



body is quadrupedal, and the legs are simple pinched protrusions. There is a hint of a short tail hanging between the rear legs. There is a large, kidney-shaped white stone inclusion on the proper right side resulting in some cracking and splattering. The figurine measures 2.8 cm in length by 1.4 cm in width. The maximum height is 1.75 cm. The short, compact shape of the body could represent a short compact animal, such as a pig, or instead could simply be a miniature representation of a larger, compact animal such as a bull or ram.

The third miniature figurine is that of E.2.41.1. This handmade figurine was significantly damaged and is missing its head, left front leg, and both rear legs. The tail also shows a break close to the body. The torso is tubular and roughly formed, with the right front leg created as a simple conical protrusion. The somewhat flattened back extends into a tail that curves slightly to the animal's right side. The figurine measures 4.4cm in length by 2.9 cm in width, with a maximum height of 2.9 cm. The body shape suggests an animal with longer legs and tail, different from what has been seen on caprid figurines. This instead could represent an animal with a more mobile tail such as a dog, cow, or horse.

The next two mixed context figurines resemble caprids or cattle in their body shapes and other distinctive characteristics. The first figurine to be discussed here is G.7.24.5 (Figure 27J). This figurine retains its head, neck and front legs. The head is most distinguished by its wide, horizontal horns/ears and two eyes that are impressed into the forehead. The mouth/snout is broken, and further diagnostic elements from the face are therefore missing. The thick neck merges into the front shoulders with little differentiation except for a groove circling the neck, possibly indicating a collar or other form of tethering. This groove does not completely encircle the neck, but stops just under the chin. Two short front legs are pinched from the bottom, both of which are broken off. The figurine measures 3.3 cm in length by 2 cm in width. The width of the horns/ears at the breaks is 2.7 cm, and the figurines maximum height is 2.4 cm. This figurine probably represents a smaller horned animal such as a sheep or goat.

The second, probably caprid, figurine from the mixed context portion of the collection is that of D.8.52.8. This figurine is hand formed to represent a very robust animal. Only the front half of the object survived deposition, and calcareous accretions cover much of its surface. The head of the animal is topped by two flattened round parts resembling curled horns or ears, and the rest of the face and mouth are formed but undefined. A flattened triangular area at the top of the head between the horns tapers as it extends into a ridge along the back. The neck is thick and extends behind the head as a thick upper bulge above the torso. The front legs are short, rounded protrusions, not extending beyond the animals body. In cross section, the torso is teardrop in shape, with the widest portion forming the animal's belly. The figurine measures 6cm in length with a width of 2.7cm and a height of 2.8cm. The width of the head measures 2.8cm and the height of the torso at the break is 3cm, and it weighted 69.3g. The robustness of the overall body shape and the features of the animal's head and neck suggest this figurine represented a sturdy, strong animal, such as a ram or a bull.

The final artifact to be discussed in this report is G.9.15.5. This figurine is highly damaged and characteristics of what it may have represented are lacking. The figurine



consists of a narrow torso, leading into a thick and rounded end with two protrusions (one partially broken) extending out from the central portion suggesting legs. A small pinched tail points up from between the figurine's legs, and the rest of the object is formed from irregular bumps and ridges. The figurine measures at 3.5cm in length with a width at the legs of 2.6cm. The width at the smallest point of the torso is 1.1cm and its maximum height is 1.9cm. If oriented horizontally, this could represent a quadrupedal animal with a broad posterior and narrow torso. If oriented vertically, this could represent a seated figure, with legs outstretched and again the narrow torso. Without further evidence for this figurine, other analysis is not possible at this time.

These newly added figurines bring the total corpus of the Kenan Tepe collection up to 56. While there is a good deal of variation between time periods and across the site, the majority of figurines depict animals, most of which are livestock animals such as sheep, goats and cattle. Notably, none of the figurines can be identified as pigs. Future investigation into these figurines will focus on the interesting accumulation of figurines from the Middle Bronze Age contexts in area D. Information on earlier recorded figurines can be found in Parker and Dodd (2005).

## Seals

During the 2004 and 2005 field seasons at Kenan Tepe, three cylinder seals and one seal impression were added to the body of glyptic and related artifacts already recovered (Figure 28). Among the already published objects from this collection were nine sealings, or pieces of clay used to "seal" an object (Parker and Dodd 2005). The majority of the Kenan Tepe sealings only retain evidence of materials used in conjunction with the act of sealing, such as cord (A.9.23.5, F.8.8007.8076, F.13.8.13, A.9.5.22.1), reeds (C.1.1070.32) and netting (F.7.7067.165). A number of these sealings also retain fingerprints, the last gesture of the action recorded in clay. In only one of these examples, however, was a seal impression recorded (A.9.5.21.1; Parker and Dodd 2005). This sealing was impressed with a geometric design, but was only partially preserved. The presence of a seal impression is very important since it not only preserves the image from the seal, but also shows what types of material were impressed with specific seals.

From the 2005 field season, a second seal impression was added to the Kenan Tepe collection (C.1.1109.14 [Figure 28A]). This example, however, was impressed on a broken piece of pottery rather than on a sealing. The original wheel-formed vessel was comprised of a coarse, micaceous, chaff-tempered fabric. It would have been a relatively sturdy and secure vessel with little surface porosity and strong, thick walls (1.45 cm). The sherd itself is triangular in shape (9.5 x 5.1 cm) and weighs 85 g. The seal's decoration is preserved in two parallel but incomplete rolled impressions. Based on the size of the impression and its length at repetition of the image, the seal itself was probably 3.6 cm in height and 6.85 cm in circumference. Whatever its original use, the vessel was broken and the sherd was placed in a plastered floor/surface of a house in the Early Bronze age, roughly the late 3rd millennium BC.

The C.1.1109.14 impression was made when the ceramic fabric was still plastic enough to receive the impression, but not so wet as to let the seal sink into the clay. The

detail of the impression is high and the impressed lines are sharp, distinct and fairly deep. The upper and lower borders of the rolled impression do not press deeply into the vessel's surface, but instead blend smoothly into the unimpressed portion of the sherd. As indicated by the sheen in the spaces between the impressed figures, the rolling was continuous. This sheen was created from the pressure exerted on the seal during impression. The two partial impressions, upper and lower, each contain a different part of the complete decoration. The upper rolling preserved on the sherd partially depicts the lower portion of the impression, while the lower rolling preserves a more complete depiction of the top portion of the seal. By combining the two, it is possible to create a representation of what the impression would have looked like *in toto* (Figure 28B).

Depicted in the seal impression is an extraordinary hunting/combating scene. Before repeating, from right to left there are three figures: a bird-man, a monster (feline?), and a stag. Only the head, chest, and arms of the bird-man are impressed in the lower rolling. The head, with a beak-like face and two feather-like projections from the top and back of its head, is seen in profile and faces to the left. A straight, thick neck joins the head to the frontal chest, which is depicted suggesting the appearance of ribs. The bird-man's arms are both extended horizontally, but the proper left arm bends down at the elbow and the proper right arm turns up at the elbow. Both hands are shown with three open fingers/claws, with the proper right hand holding what may be a vertical staff/weapon or possibly the tail of the monster. Parts of the bird-man's feet and possibly a portion of tail are preserved in the upper impression. The figure's feet turn to the left. One of the feet is only preserved by the indication of a heel, while the other indicates a down-turned claw and a thick leg.

Of the monster figure, only the head and upper portion of the body are preserved in the impressions. The head is in profile, facing to the left, and is depicted as a snarling open mouth with fangs/teeth and a nondescript oblong head. The ornamentation at the back of the head suggests a protrusion, such as an ear, horn, feather or bound segment of hair. The forelegs of the monster are placed on the back of the stag, which it grasps with two-taloned appendages.

The stag can be pieced together from both the top and bottom impressions. It rears to the left, but it is difficult to determine whether its head is turned to the right to face its attacker or away to the left. A notched-horn sprouts from the top of its head and curls down and around to the right. Each leg ends in a blunt hoof. The hind legs are placed on the imagined ground line, but the stag's forelegs are in the air, rearing from the attack. The rest of the body consists of a straight and thick torso with a rounded posterior. The monster is depicted grasping the stag at the back just below the neck.

The remaining additions to the Kenan Tepe glyptic collection are three ceramic cylinder seals, two of which date to the Chalcolithic period (F.2.2042.7 and F.7.7109.6). These two Chalcolithic seals both depict abstract geometric and/or vegetal motifs. The F.2.2042.7 seal was damaged post-deposition, leaving large chips in the seal's surface (Figure 28C). The chips on the face are sharp, indicating that they were not present during use. The two large chips are on opposite sides of the upper decorated seal surface, and a small gash cuts part of the edge. Both sides of the seal, as well as one end, are slightly concave. The seal is perforated lengthwise by an off-center hole with displaced clay

surrounding the hole on either end, producing a messy finish. The seal is 2.4 cm in length, with a diameter ranging from 1.75 to 1.9 cm.

The seal's decoration is contained within a band formed by two incised lines, one encircling each end of the seal. These lines are not straight, but are rather wobbly in their execution. Framed by these lines are two rows of the linear vegetal pattern. This pattern consists of repeated clusters of four or more lines that come together, but do not join or overlap near the middle of the register. These clusters then widen into a fan shape towards either of the above mentioned boundary lines. Thus, each row appears as clustering leaves, palm fronts, or perhaps reeds spreading out towards the two ends of the seal. As seen in Figure 28C, the uppermost register of the seal contains four of the line clusters, two having been damaged. The bottom register contains five of these complete clusters.

The second Chalcolithic seal (F.7.7109.6) is decorated with an incised wavy line pattern (Figure 28D). The shape of the seal is not uniform and the sides are relatively concave. The seal measures 2.9cm in length and has a maximum diameter ranging from 1.65 to 1.8 cm. The surface of the seal is chipped, worn, and cracked in places, with calcareous accretions concealing some of the surface. Further, the ends of the seal are not flat, but slightly depressed in the center with a single hole perforating the seal lengthwise.

The seal is decorated with seven to nine incised, parallel, wavy lines that change direction across the face of the seal. The number of incised lines varies due to use of space on the seal. In some places the lines come so close that some merge together. At what was perceived as the bottom portion of the impression, angled lines are inscribed, forming multiple, stacked shapes like the top angle of a triangle. These lines were incised into the seal giving the impression of the zigzagged line motif continuing down off the register. Where the lines change directions in the main decoration, one end creates a series of sharp angles where the lines begin and end but do not always join. The middle sections drop down and then curve up, often creating thicker lines at the base of the curve. The overall appearance is a series of "u" shapes with the tips touching, rather than smoothly waving lines. Parallels for this seal can be found in Lapp 1989 (figure 1) and Porada 1970 (no. 140).

The final ceramic seal to be discussed here is D.5.5182.10 (Figure 28E). This seal was discovered in a mixed context pit, possibly dating to the Middle Bronze Age. The greatest diameter of the seal is in the central area measuring 2.05cm. Both the top and bottom are slightly smaller in diameter. Where the ceramic surface is not marked by damage or voids, it is smooth with a slight sheen. Several cracks and chips follow the weaknesses of the incised decoration, and a white stone inclusion appears in one of the outer incised lines. An off-center hole perforates the object lengthwise.

The incised design consists of two registers of zigzagged lines framed by three horizontal lines, one each at the top and bottom as well as one horizontally bisecting the registers in the middle. In what was illustrated as the top register, the zigzag line is continuous, while in the second register the beginning and end of the pattern are not connected. Instead, two parallel incisions are left without joining into the rest of the system. Parallels for this seal can be found in Matthews (1997, no. 412).

It should be stated here, however, that this object may not actually be a seal; it might be a bead. The possible change in object classification is due to the inconsistency in

length of the artifact. The seal/bead ranges in length from 2.2 to 2.35cm from side to side. If the object is a bead and were suspended on a cord, the effect would be like a small segment of a ring-like shape. This same discrepancy in length would also cause the object, if used like a seal, to produce a lopsided or curved impression.

With these additions, the total corpus of seals and related artifacts is increased to two stamp seals, eight cylinder seals, two seal impressions and eight possible sealings. (For further information on seals and related artifacts previously published, please see Parker and Dodd 2005). Future analysis will focus on the entire corpus of seals and related artifacts.

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Fig. 1. View of the site of Kenan Tepe facing north.

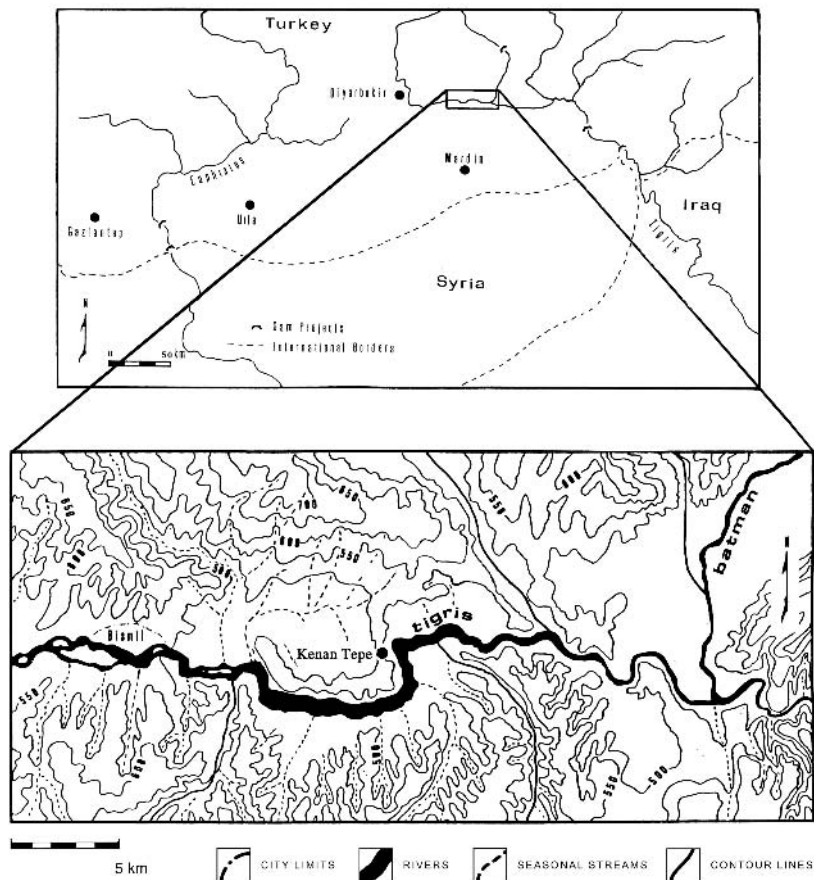


Fig. 2. Map of southeastern Turkey with enlargement showing the Upper Tigris River region with the location of Kenan Tepe.



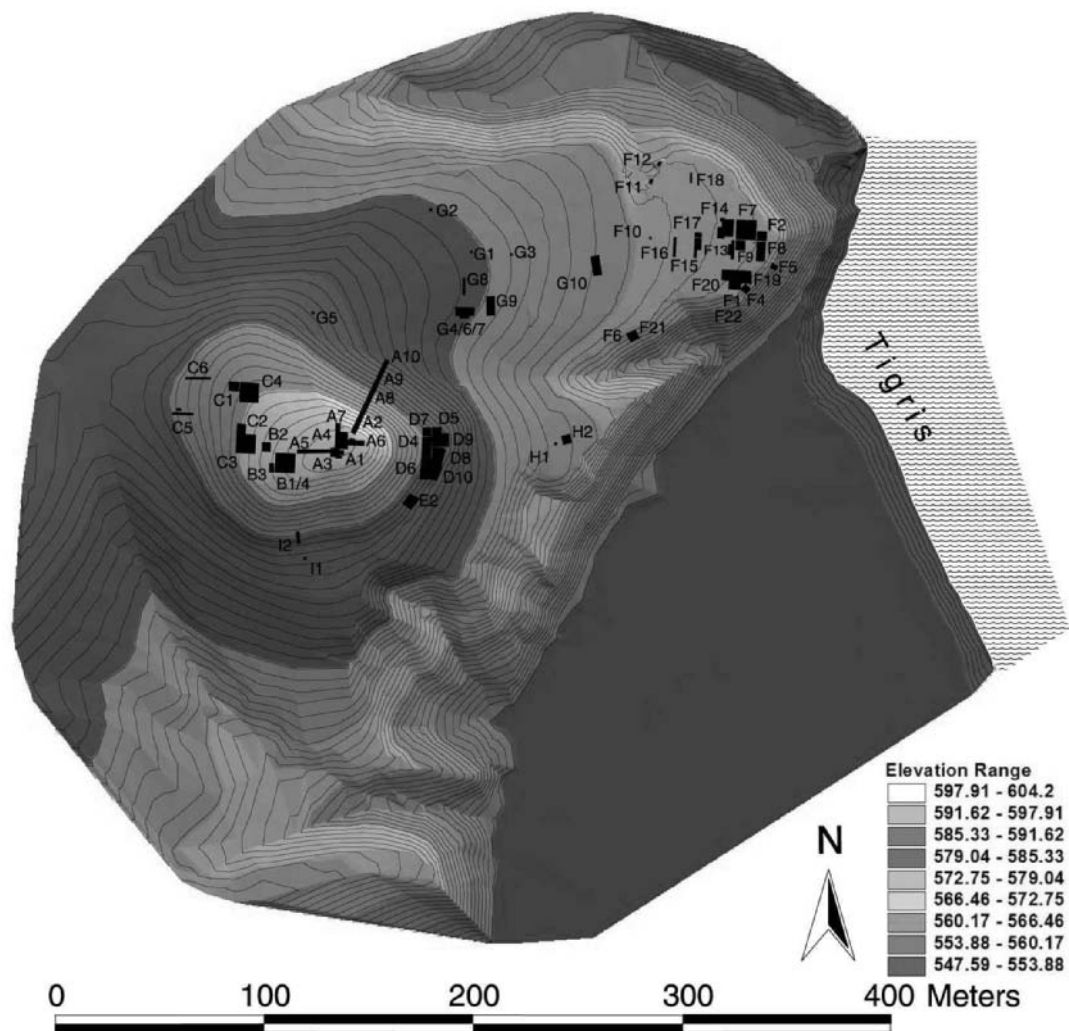


Fig. 3. Topographic map of Kenan Tepe showing the location of excavation areas and trenches.



Fig. 4. View of trench D8 showing the remains of Ubaid Structure 2.

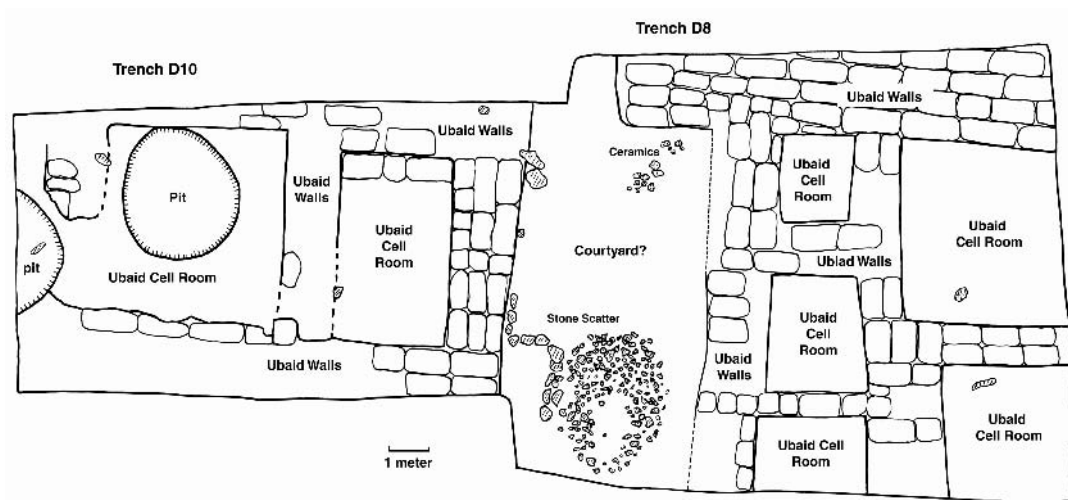


Fig. 5. Plan of Ubaid Structure 2.



Fig. 6. Secondary burial (L90) from Ubaid Structure 2. These remains were placed partially within cell L87 and partially within the mud bricks that made up wall L70.



Fig. 7. View of trench D10 and the southern portion of trench D8 illustrating the southern end of Ubaid Structure 2 and possible later (Phase 4) construction.

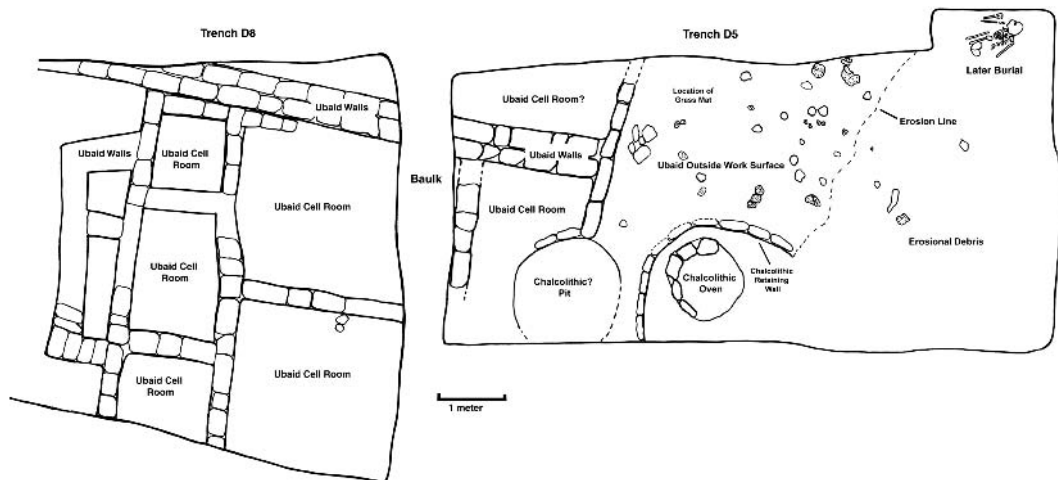


Fig. 8. Plan of Ubaid Structure 1.

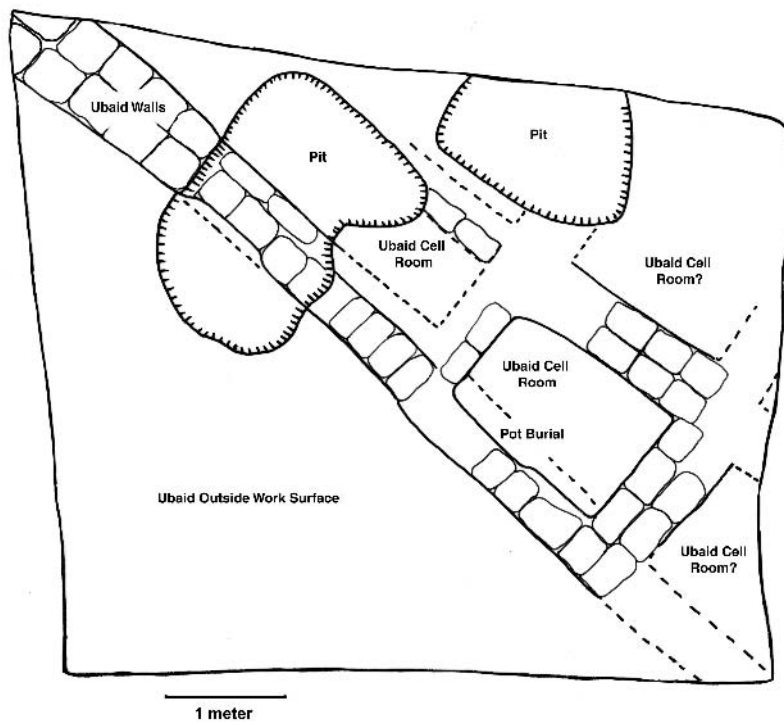


Fig. 9. Plan of Ubaid Structure 3.



Fig. 10. Photograph showing Ubaid pot burial (E.2.146.6) discovered in Ubaid Structure 3.



### Figure 11 descriptions

- A. F19 L9 KT8 #2: Pinkish gray exterior surface (7.5YR 6/2). Black interior surface and fabric (10YR 2/1). Decorated with parallel vertical and horizontal incised lines. Fine white grit and large chaff temper.
- B. F22 L4 KT3 #4: Reddish brown exterior surface (2.5YR 4/3). Dark gray interior surface (7.5YR 4/1). Dark red fabric (2.5YR 3/6). Linear incised decoration with evidence for paint and burnished exterior. Large grit temper with some fine micaceous grit.
- C. F19 L12 KT2 #3: Very dark gray exterior surface (10YR 3/1). Grayish brown interior surface (10YR 5/2). Black fabric (2.5YR 2.5/1). Gray (2.5YR 5/1) painted (?) decoration beneath rim. Fine micaceous grit temper. Burnished exterior and interior surfaces.
- D. F22 L6 KT3 #3: Reddish yellow exterior surface (5YR 7/6). Pink interior surface (5YR 7/4). Reddish yellow fabric (5YR 6/8) with no core. Fine ware carinated bowl with incurved rim. Medium grit temper.
- E. F19 L12 KT2 #5: Pale yellow exterior and interior surface (2.5YR 7/3). Light yellowish brown fabric (2.5YR 6/4). Fine ware bowl (Type 7) with three parallel incised lines on exterior. Very fine grit temper.
- F. F21 L2 KT4 #1: Light brown exterior and interior surface (7.5YR 6/4). Whole carinated bowl with slightly beaded rim and round base.
- G. F22 L6 KT3 #1: Light red exterior surface (2.5YR 5/6). Red interior surface (2.5YR 6/6). Reddish yellow fabric (5YR 6/8) with no core. Fine ware plain rim bowl with smoothed exterior and corrugated outside surface. Horizontal burnish on exterior. Fine to medium chaff and very fine micaceous grit temper.
- H. F19 L12 KT2 #7: Brown exterior surface (10YR 5/3). Reddish brown interior surface (5YR 5/6). Brown fabric (7.5YR 4/2). Grit and chaff temper.
- I. F21 L2 KT3 #1: Very pale brown exterior surface (10YR 7/3). Light reddish brown interior surface (5YR 6/3). Reddish yellow fabric (5YR 6/6). Whole string cut-base bowl with straight rounded rim. Fine grit temper.
- J. F19 L14 KT10 #4: Light reddish brown exterior and interior surface (5YR 6/4). Reddish yellow fabric (5YR 6/8). Hammerhead rim bowl with wheel striations. Dense fabric with fine chaff and grit temper. Chaff facing.
- K. F22 L4 KT3 #1: Pale yellow exterior surface (5YR 8/4). Pale yellow interior surface (5YR 7/4). Pale yellow fabric (5YR 8/3) with little to no fine grit temper. Fine ware vessel (Type 7) with straight neck and everted rim.
- L. F19 L14 KT10 #2: Gray exterior surface (5YR 5/1). Light reddish brown interior surface (5YR 6/3). Light olive brown fabric (2.5YR 5/3). Slightly carinated cup with beaded rim. Medium chaff temper with chaff facing. Minimal fine grit.
- M. F22 L4 KT3 #2: Reddish yellow exterior surface (5YR 6/6). Reddish brown interior surface (5YR 5/4). Reddish yellow fabric (7.5YR 6/6). Cup-bowl with simple, squared off rim. Large chaff and fine calcareous grit temper.
- N. F22 L4 KT1 #1: Pink exterior surface (7.5YR 7/4). Strong brown interior surface (7.5YR 5/6). Dense yellowish red fabric (5YR 5/8). Abrupt transition to black core (5YR 2.5/1). Medium to large white grit and medium chaff temper. Some chaff facing.
- O. F19 L12 KT2 #6: Pale brown exterior surface (10YR 6/3). Strong brown interior surface (7.5YR 5/6). Brownish yellow fabric (10YR 6/6). No visible temper.

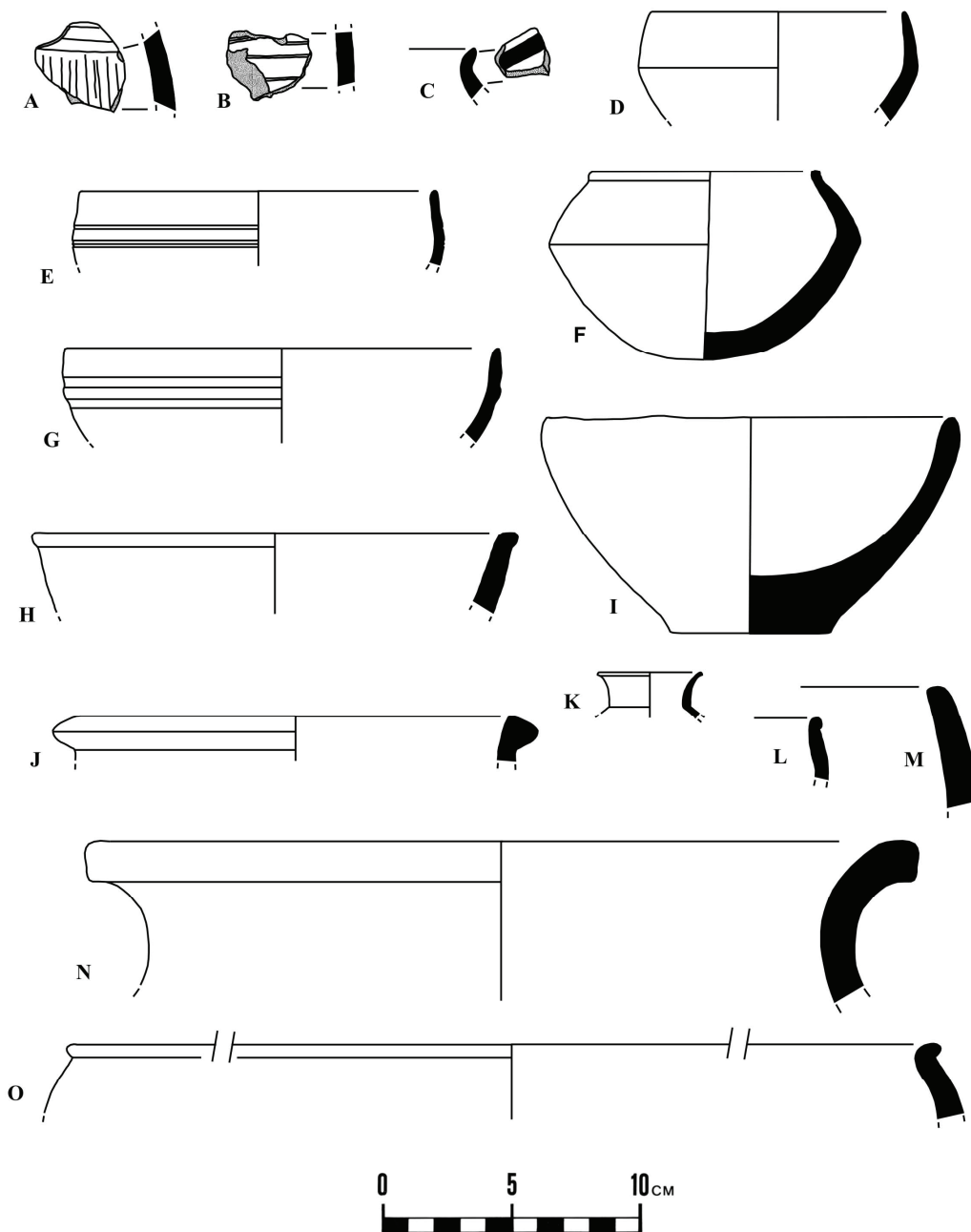


Fig. 11. Late Chalcolithic ceramics from trenches F19, 20, 21, and 22.

**Figure 12 descriptions**

- A. F7 L7208 KT6 #2: Pink exterior surface (7.5YR 7/3). Pink interior surface (7.5YR 7/4). Reddish yellow fabric (5YR 7/6). Dense fabric with fine white grit and small to medium chaff.
- B. F7 L7151 KT9 #1: Pedestaled bowl with vertical exterior burnish.
- C. F7 L7151 KT10 #1: Reddish yellow exterior surface (5YR 6/6). Light yellowish brown (10YR 6/4) and reddish yellow (5YR 6/6) interior surface. Yellowish red core (5YR 5/8). Complete footed bowl with geometric incised design. Some small micaceous grit temper.
- D. F7 L7208 KT6 #5: Brown exterior surface (7.5YR 5/4). Light brown interior surface (7.5YR 6/4). Reddish yellow fabric (7.5YR 6/8) grading to very dark gray core (7.5YR 3/1). Necked jar with everted rim and horizontal lug extending from rim. Coarse ware with fine to coarse white grit and medium to large chaff.
- E. F7 L7180 KT10 #2: Brown exterior surface (7.5YR 4/2). Dark grayish brown (10YR 4/2). Red fabric (2.5YR 4/6) grading to dark brown core (7.5YR 3/2). Fine chaff and medium white grit. Burnished exterior and interior.
- F. F7 L7180 KT10 #1: Light brown exterior and interior surface (7.5YR 6/4). Reddish yellow fabric (7.5YR 6/6). Hammerhead rim with light exterior horizontal burnish. Small to medium fine grit temper.
- G. F7 L7151 KT26 #1: Pale yellow exterior and interior surface (2.5YR 7/3). Pale olive core (5YR 6/3). Complete fine ware (Type 7) incurved rim bowl. Very fine chaff temper. Two parallel incised lines on exterior body.
- H. F7 L7151 KT27 #1: Olive exterior surface (5YR 5/4). Pale olive core (5YR 6/4). Pre-firing indentation on carination. Complete slightly holemouth cup with simple, incurved rim.
- I. F7 L7151 KT25 #1: Red exterior and interior surface (2.5YR 5/8). Complete incurved rim bowl. Large chaff temper.



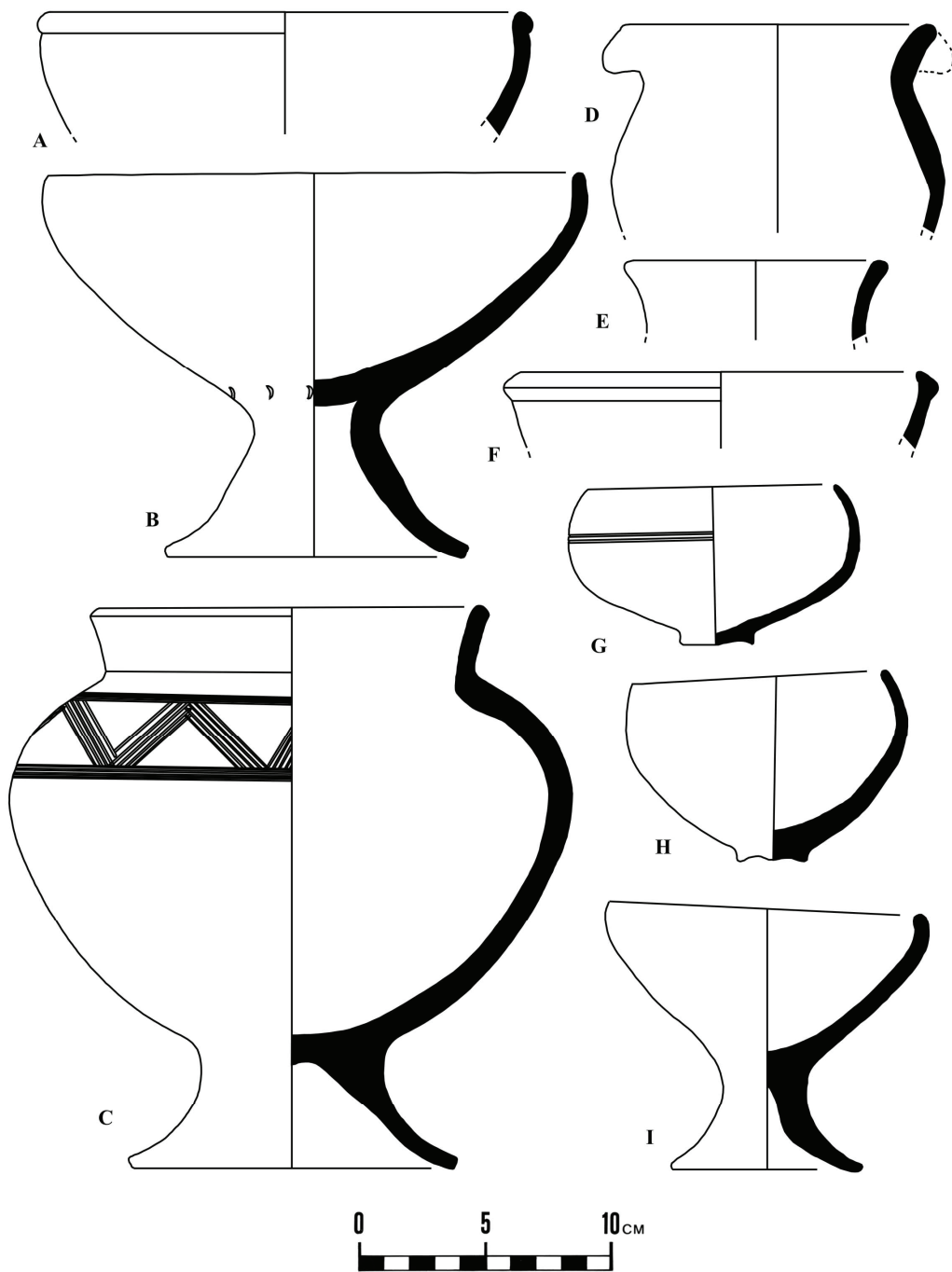


Fig. 12. Late Chalcolithic ceramics from trench F7.

**Figure 13 descriptions**

- A. F2 L2070 KT1 #1: Reddish yellow exterior surface (5YR 6/6). Simple rim bowl with thick string-cut base. Coarse chaff-grit fabric.
- B. F9 L9055 KT1 #3: Pink exterior surface (7.5YR 8/3). Reddish yellow interior surface (5YR 7/8). Reddish yellow fabric (5YR 6/8). Medium to large chaff and grit temper with chaff facing. Exterior cream slip cut by incised decoration.
- C. F8 L8034 KT1 #6: Light red exterior surface (2.5YR 6/6). Light reddish brown interior surface (2.5YR 6/4). Red fabric (2.5YR 5/8) grading to reddish gray core (5YR 5/2). Fine chaff and fine to medium grit temper.
- D. F9 L9055 KT1 #1: Red exterior surface and fabric (2.5YR 5/6). Light red interior surface (2.5YR 6/6). Carinated cup with small beaded rim. Fine to medium chaff and mica/calcareous grit temper.
- E. F2 L2042 KT1 #7: Reddish yellow exterior surface (7.5YR 7/6). Pink interior surface (7.5YR 7/4). Very pale brown fabric (10YR 7/4) grading to reddish yellow core (5YR 6/6). Hammerhead rim bowl. Burnished on interior and exterior. Fine micaceous grit temper.
- F. F8 L8034 KT1 #2: Light red exterior surface (2.5YR 7/6). Light red interior surface and fabric (2.5YR 6/6). Medium to large chaff and large black and white grit.
- G. F9 L9055 KT1 #6: Light brown exterior surface (7.5YR 6/4). Light reddish brown interior surface (5YR 6/4). Light red fabric (2.5YR 6/6). Hammerhead rim bowl. Medium to large grit temper in fabric and very fine mica on interior/exterior surfaces.
- H. F2 L2049 KT1 #1: Pale brown exterior surface (10YR 6/3). Brown interior surface (10YR 5/3). Dark gray fabric (10YR 4/1). Abrupt transition to yellowish brown core (10YR 5/4). Hammerhead rim bowl. Fine grit and medium chaff temper.
- I. F8 8034 KT1 #4: Light red exterior and interior surface (2.5YR 6/6). Light red fabric (2.5YR 6/6). Fine to medium calcareous grit and large chaff temper. Some chaff facing.
- J. F2 L2056 KT4 #1: Light reddish brown exterior and interior surface (5YR 6/4). Reddish yellow fabric (5YR 6/6). Burnished exterior surface. Large calcareous grit temper.
- K. F2 L2066 KT1 #2: Light yellowish brown exterior and interior surface (10YR 6/4). Reddish yellow fabric (7.5YR 7/6). Holemouth/incurred rim with smoothed exterior and mica visible on exterior surface. Fine to large grit temper.
- L. F2 L2042 KT1 #6: Reddish yellow exterior surface (5YR 6/6). Light reddish brown interior surface (5YR 6/4). Reddish gray core (5YR 5/2). Medium density fabric with few, fine grit temper. Burnish on exterior.
- M. F2 L2066 KT1 #1: Brown exterior surface (7.5YR 5/3). Pale brown interior surface (10YR 6/3). Brown fabric (10YR 5/3). Dense fabric with fine grit temper. Four parallel incised lines on exterior.
- N. F2 L2042 KT1 #4: Light brown exterior and interior surface (7.5YR 6/3). Reddish yellow fabric (7.5YR 6/6). Abrupt transition to dark gray core (7.5YR 4/1). Large, coarse chaff and white angular grit temper. Coarse ware with smoothed exterior.

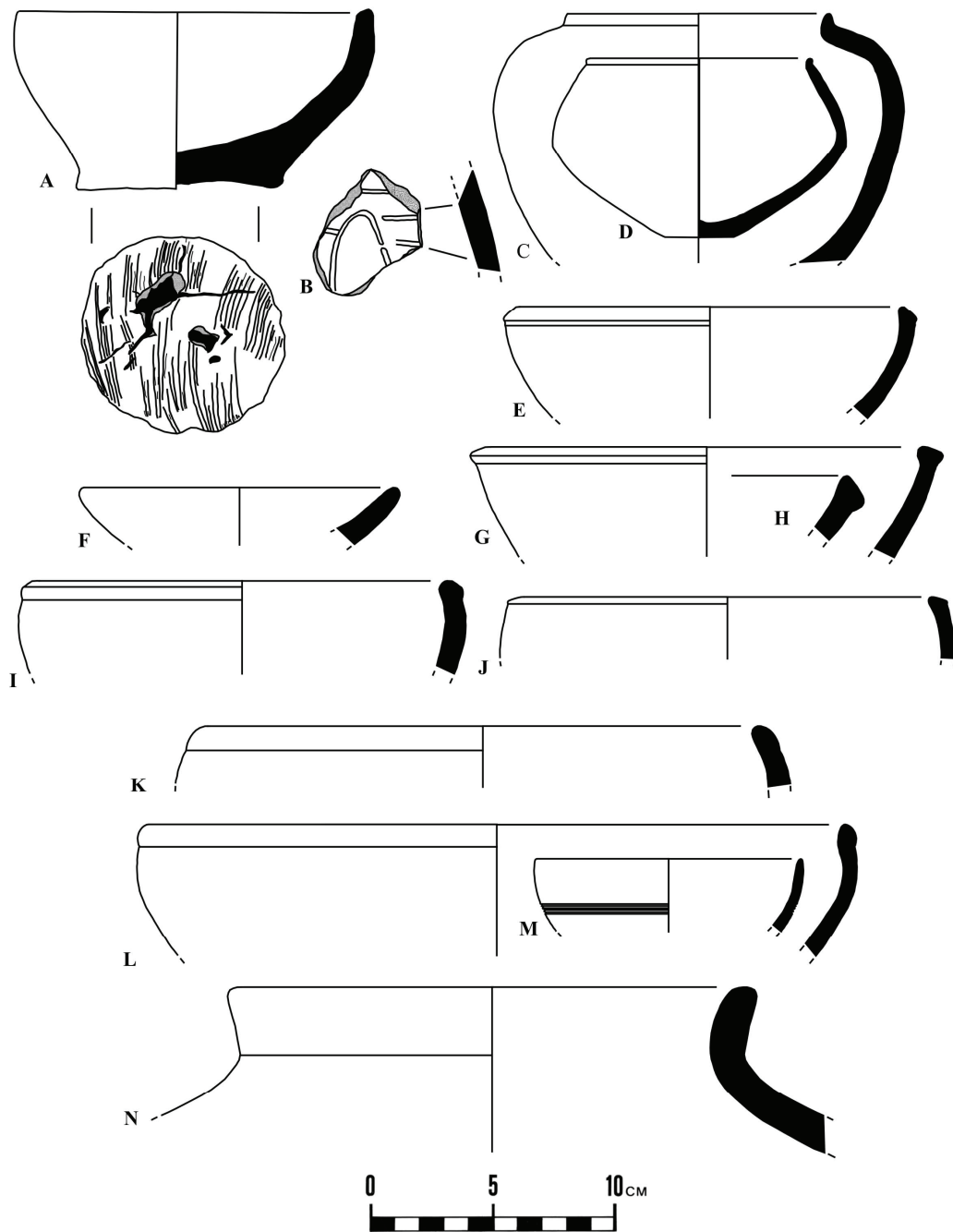


Fig. 13. Late Chalcolithic ceramics from trenches F2, F8, and F9.

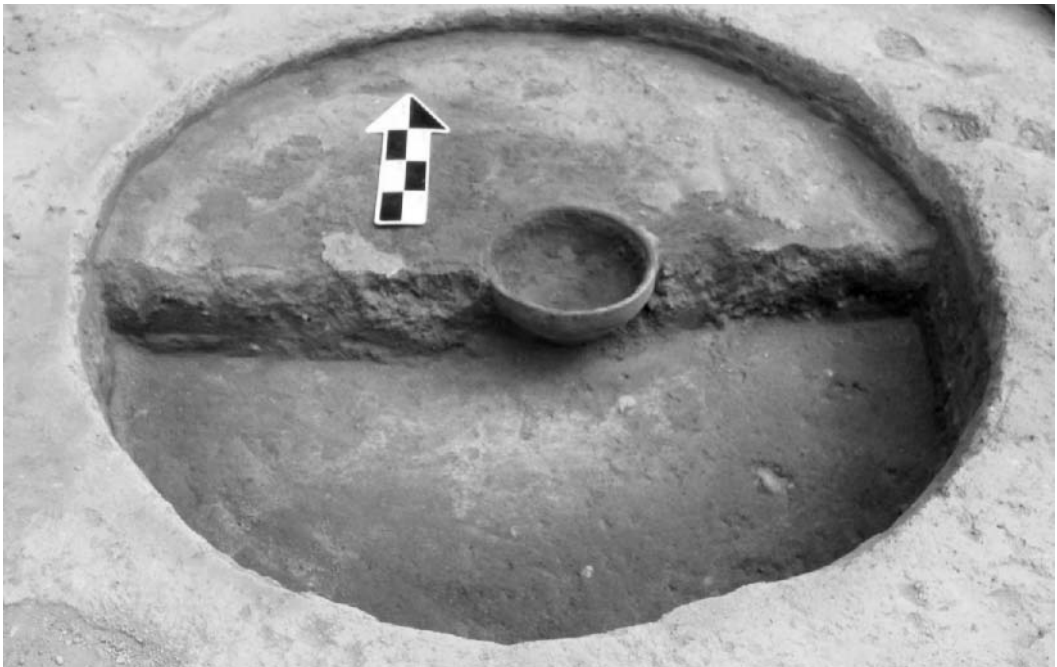


Fig. 14. Circular pit feature with string-cut base bowl in trench F2 (shown after sectioning).



Fig. 15. Overview of Chalcolithic Level 4 architecture.



Fig. 16. Late Chalcolithic brick-lined burial (L7221) in trench F7 facing east.

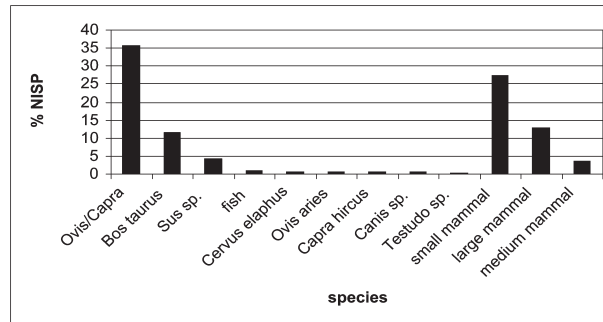


Fig. 17. Graph showing the proportion of identifiable species present in the sample analyzed.

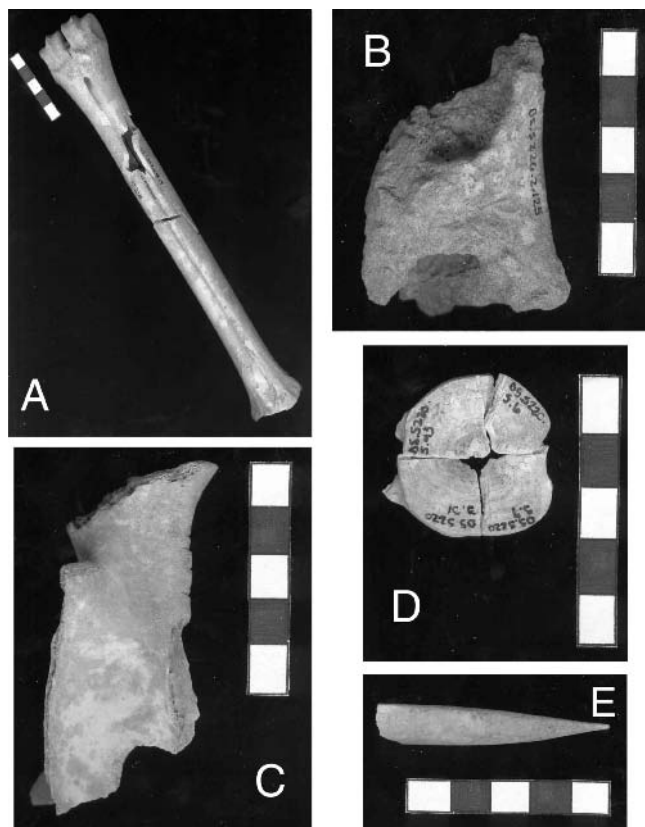


Fig. 18. Faunal remains of particular note.

Fig. 18A. *Cervus elaphus* right metatarsal.

Fig. 18B. Heavily gnawed large mammal calcaneus.

Fig. 18C. Sheep/goat scapula with cut marks on neck.

Fig. 18D. Fish centrum.

Fig. 18E. Bone point made from a sheep/goat long bone.

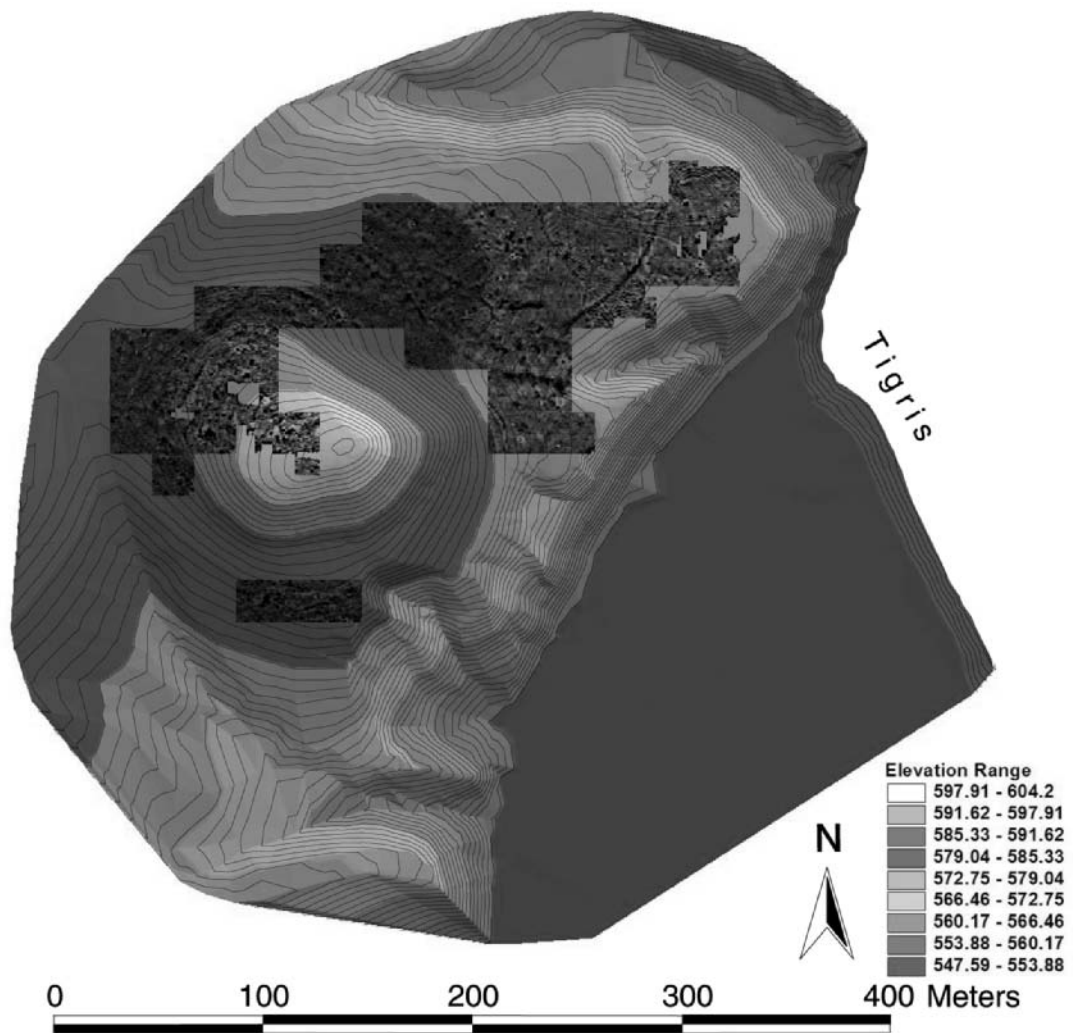


Fig. 19. Combined gradiometry from 2004 and 2005 seasons superimposed on the topo and tin map.



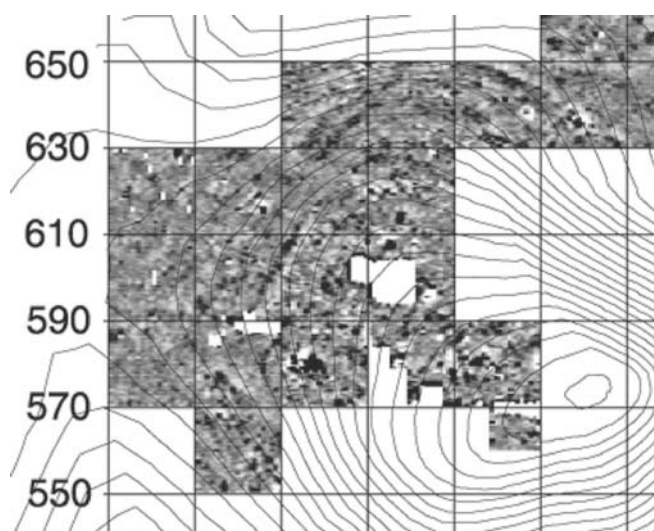


Fig. 20. Combined gradiometry from 2004 and 2005, closer view with the 20m by 20m collection grid marked.

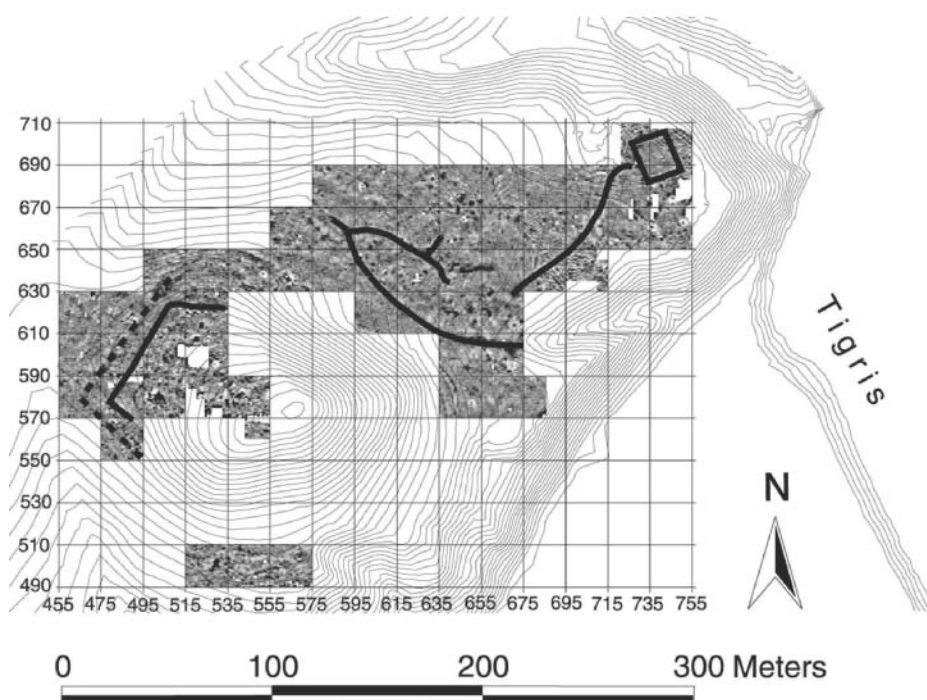


Figure 21. Copy of figure 20 with features marked. Features include: square feature at NE end of area F, winding linear features in the lower town, and linear features on the western side of the tell. The probable wall course in area C is marked by a dashed line for the outer face and a solid line for the inner face.



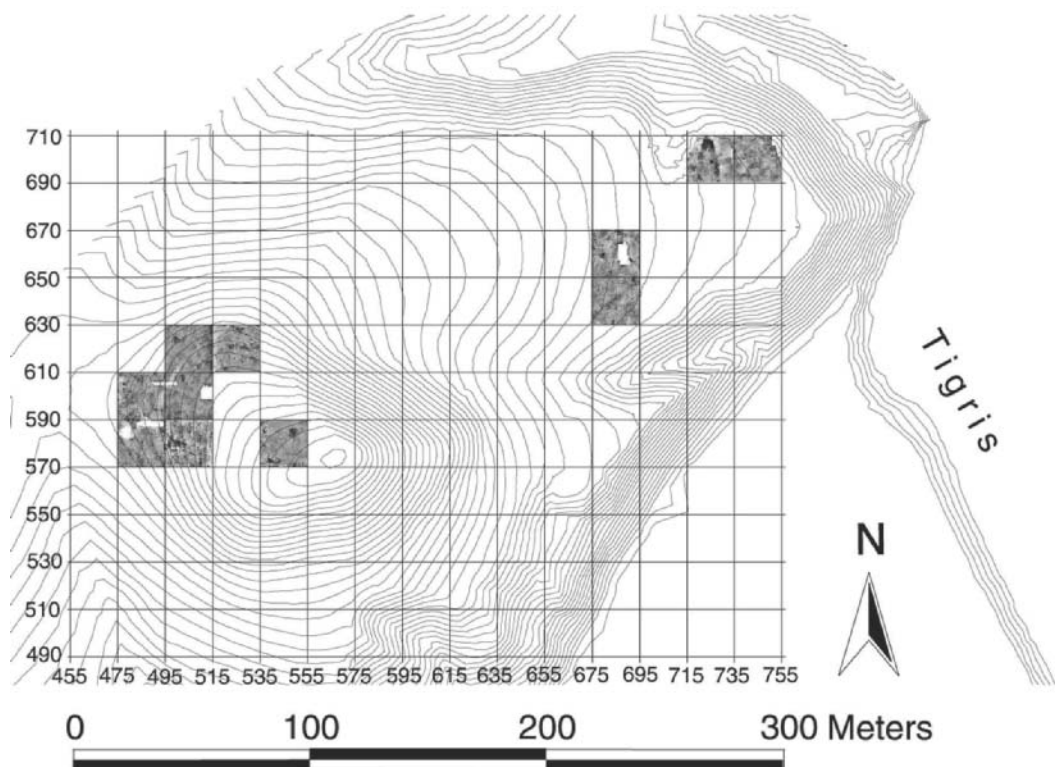


Fig. 22. Resistivity from 2005 season superimposed on the topomap with the 20m by 20m collection grid marked.

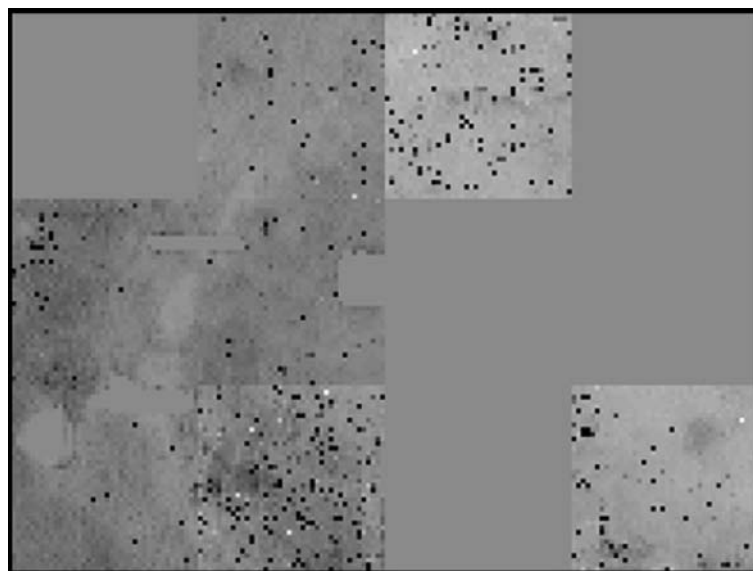


Fig. 23. Close view of raw resistivity data from the western side of the tell in Area C.

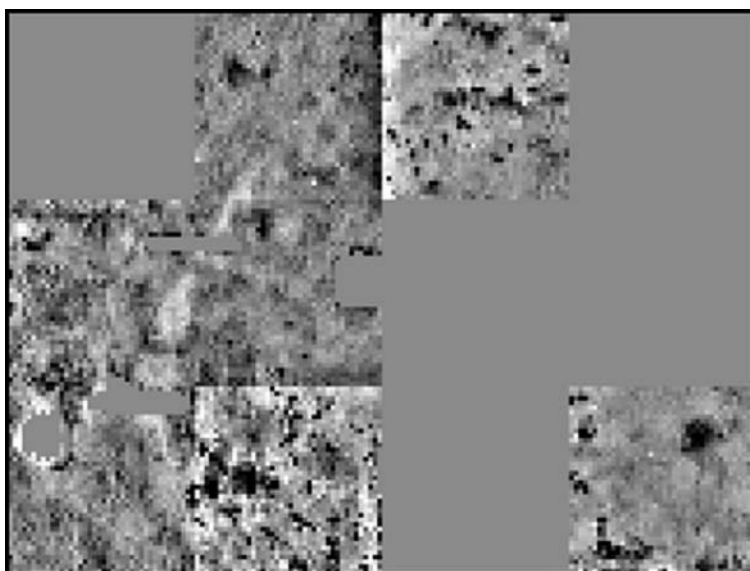


Fig. 24. Close view of processed resistivity data from the western side of the tell in Area C.

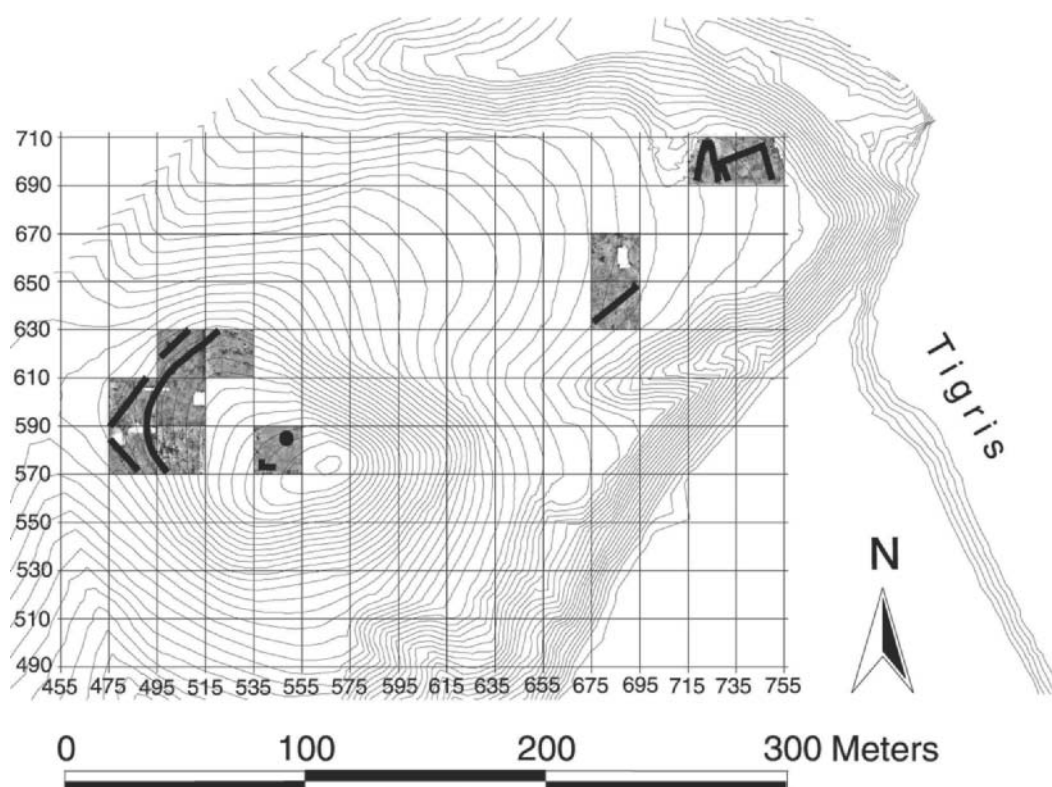


Fig. 25. Copy of Figure 22 with features marked. Features include: linear and square features in the lower town, a wall and round feature on the top of the tell. The wall on the western side of the tell is marked by a straight line for its outer face, and a curving line for its inner face where the clay layer to the east contrasts with the wall to the west.

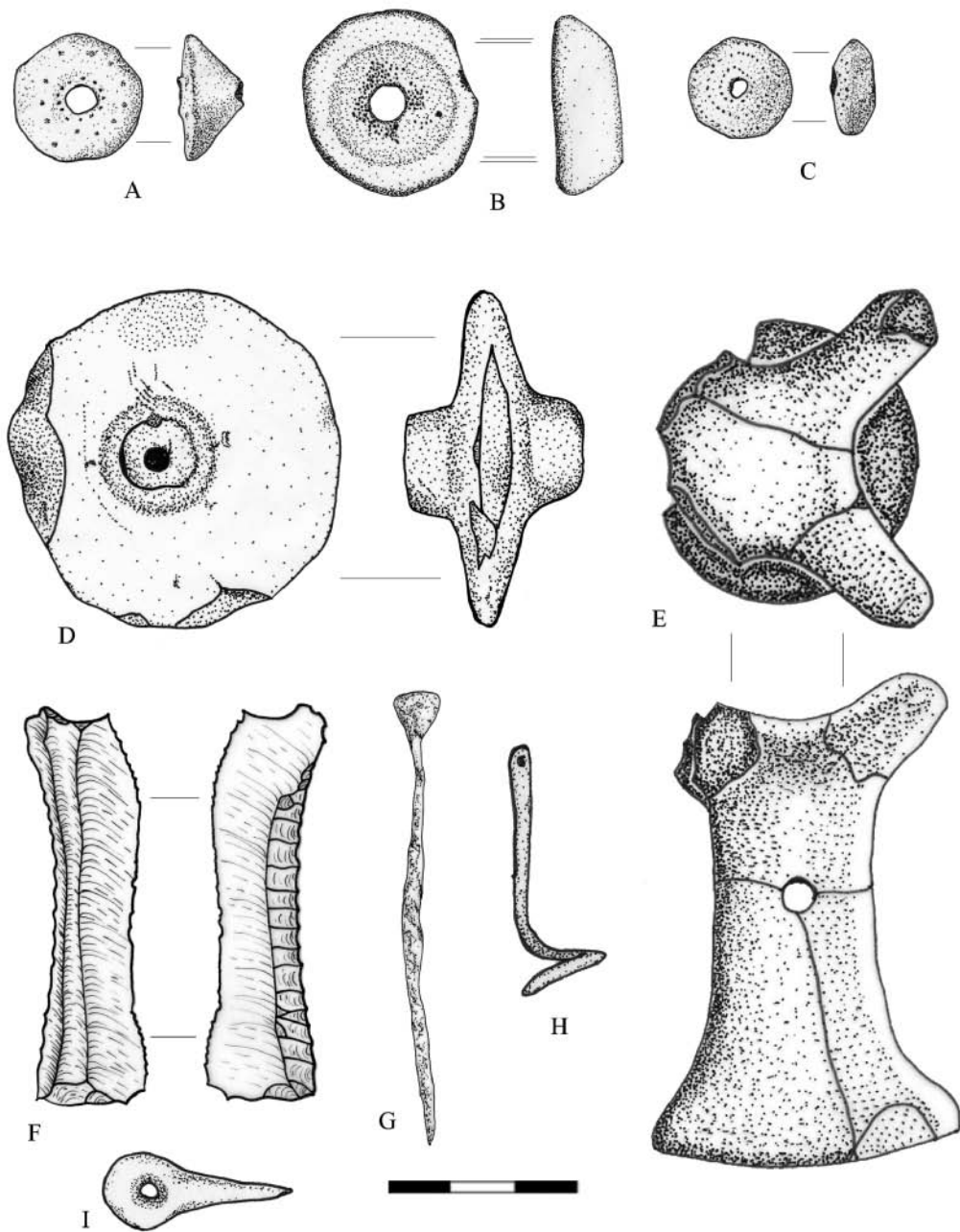


Fig. 26. Small finds from Ubaid, Chalcolithic, Early and Middle Bronze Age contexts.

Fig. 26A. D.8.58.12 Ubaid period spindle whorl with basal pin prick design.

Fig. 26B. E.2.65.16 Ubaid period bone spindle whorl.

Fig. 26C. D.10.30.8 Ubaid period spindle whorl with basal pin prick design.

Fig. 26D. D.8.30.14 Middle Bronze Age "wagon wheel" spindle whorl.

Fig. 26E. F.8.8038.4/5 Chalcolithic period ceramic pot stand.

Fig. 26F. G.7.52.2 Early Bronze Age lithic blade.

Fig. 26G. G.7.59.1 Early Bronze Age metal pin from a burial.

Fig. 26H. F.7.7117.7 Early Bronze Age metal pin from a burial.

Fig. 26I. C.1.1131.40 Early Bronze Age bone pendant or tool.

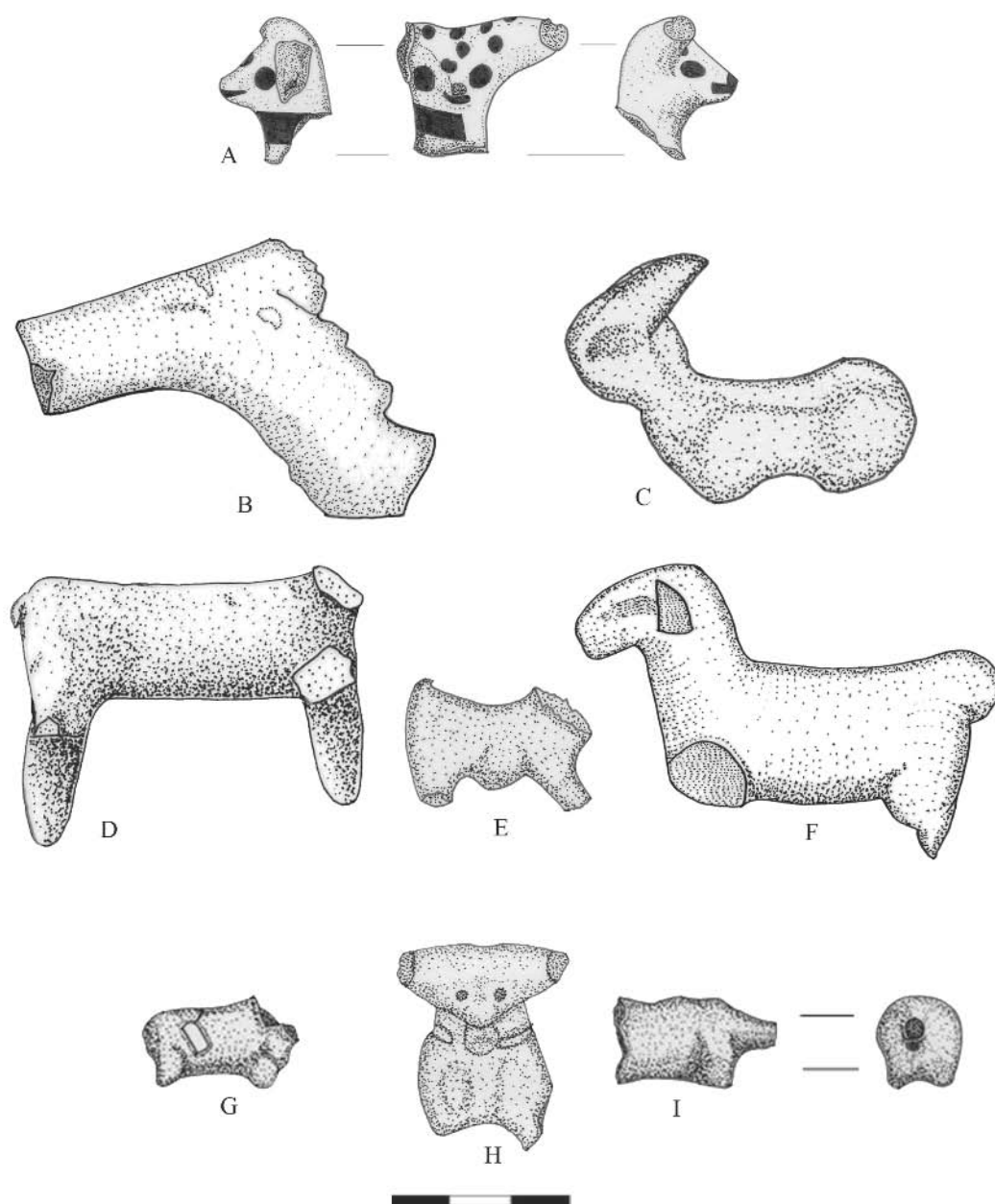


Fig. 27. Figurines from Ubaid, Chalcolithic, Middle Bronze Age and Mixed contexts.  
 Fig. 27A. E.2.145.7 Ubaid period painted figurine head in the shape of a horned animal.  
 Fig. 27B. F.7.7139.4 Chalcolithic period figurine.  
 Fig. 27C. F.2.2061.25 Chalcolithic period figurine of a recumbent animal.  
 Fig. 27D. D.10.11.9 Middle Bronze Age figurine of a standing quadruped.  
 Fig. 27E. D.8.2.5 Middle Bronze Age figurine of a standing goat.  
 Fig. 27F. D.10.4.4 Middle Bronze Age figurine of a standing caprid.  
 Fig. 27G. D.5.5150.4 Mixed context figurine of a stocky animal.  
 Fig. 27H. G.7.24.5 Mixed context figurine of an animal with a "collar."  
 Fig. 27I. D.9.4.9 Mixed context figurine of an animal.



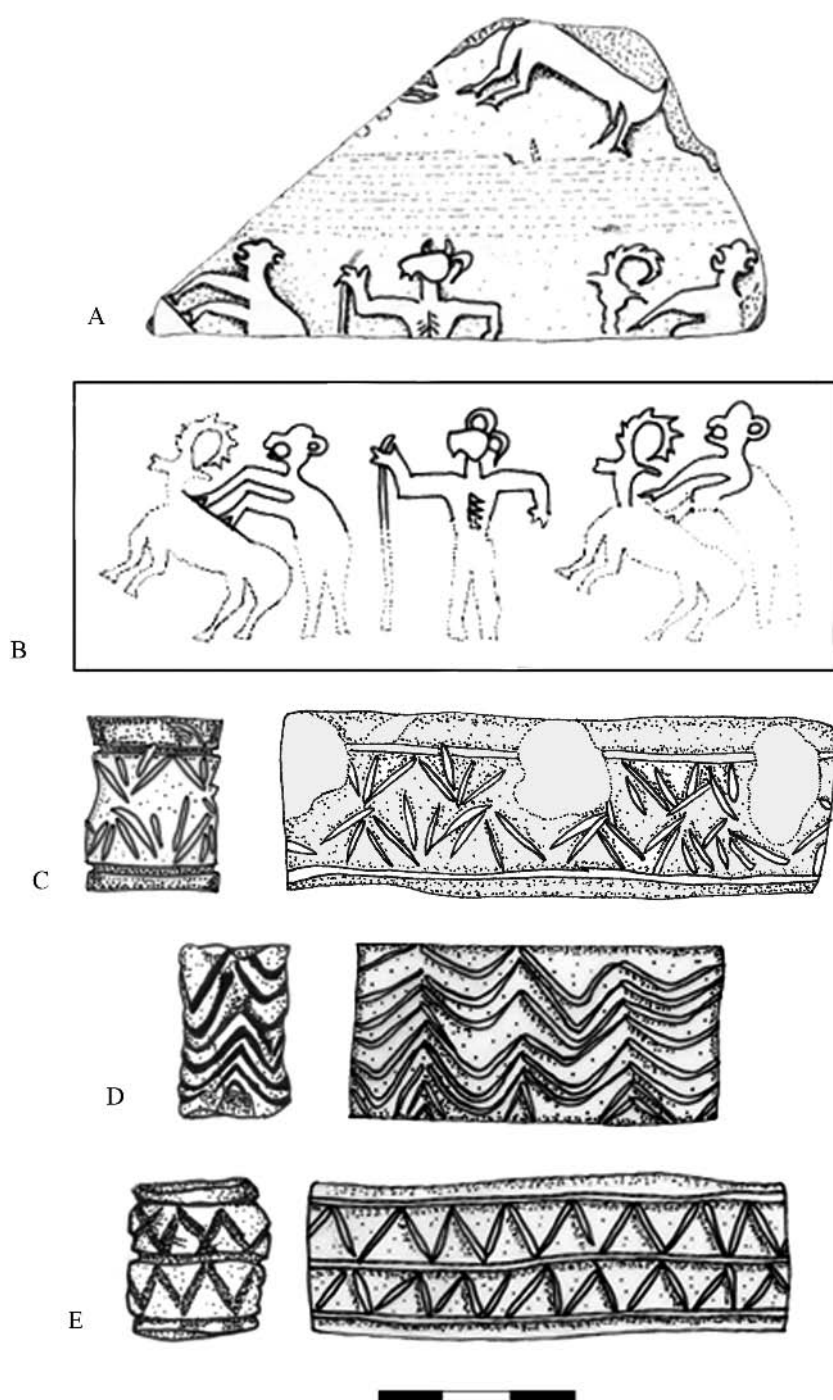


Fig. 28. Seal and seal impressions from the 2004 and 2005 field seasons.

Fig. 28A. C.1.1109.14 impressed pottery sherd.

Fig. 28B. Reconstruction of seal impression from C.1.1109.14 impressed pottery sherd.

Fig. 28C. F.2.2042.7 cylinder seal with vegetal motif and seal impression.

Fig. 28D. F.7.7109.6 cylinder seal with wavy line motif and seal impression.

Fig. 28E. D.5.5182.10 cylinder seal with geometric motif and seal impression.

## **THE HIRBEMERDON TEPE ARCHAEOLOGICAL PROJECT 2006-2007 A preliminary report on the Middle Bronze Age ‘architectural complex’ and the survey of the site catchment area<sup>1</sup>**

*Nicola Laneri, Mark Schwartz, Jason Ur, Stefano Valentini,  
Anacleto D’Agostino, Remi Berthon, and Mette Marie Halde*

The fourth and fifth seasons of archaeological work at Hirbemerdon Tepe have been crucial for further developing the three major research objectives of the Hirbemerdon Tepe Archaeological Project, which can be summarized as follows: 1) the definition of a clear chronological sequence of occupation at the site; 2) a more complete understanding of the function of the Middle Bronze Age ‘architectural complex’ located in the High Mound; and 3) the initiation of an intensive survey that will interpret the site catchment and exploitation area (5 km radius on the Tigris’ right bank totaling 48 km<sup>2</sup>).

Thus, this preliminary report represents a collection of the different studies performed during these two years of archaeological work and will elaborate on the above-mentioned objectives. More specifically, attention will be given to new information gained about architectural features, the pottery assemblages, the stone implements, and the paleobotanical and archaeozoological data yielded from within the ‘architectural complex,’ followed by the placement of the site in its broader regional context.

<sup>1</sup> For the 2006 and 2007 seasons we would like to thank the Ministry of Culture and Tourism of Turkey for its support and the permit for archaeological work at Hirbemerdon Tepe, and, especially, Ms. Nilüfer Babacan, Ms. Yeliz Kocayaz, and Ms. Rana Alyakut who have been our representatives in the field. The project was jointly planned with Mr. Necdet İnal and Ms. Nevin Soyukaya of the Archaeological Museum of Diyarbakır, as part of the Ilisu dam project, and to them goes our warmest acknowledgment. Moreover, our best acknowledgements for financial and logistical support go to the Istituto Italiano per l’Africa e l’Oriente (IsIAO), Grand Valley State University (GVSU), Harvard University, the Italian Ministry of Foreign Affairs, the Curtiss T. and Mary G. Brennan Foundation, Credito Siciliano and other private donors who have supported the fourth and fifth seasons of excavation at Hirbemerdon Tepe.

The 2006-2007 team was composed of Dr. N. Laneri (Project Director, IsIAO), Dr. M. Schwartz (Assistant Director, GVSU), Dr. J. Ur (Director of the HMT Regional Survey, Harvard University) Dr. S. Valentini (Field Director, University of Florence), A. D’Agostino (Pottery specialist, University of Florence), K. Abend and S. Caspi (Conservators), F. Gulli (Registrar, Koç University), G. Guarducci (Illustrator, University of Florence), R. Berthon (Archaeozoologist, CNRS), U. Parlüt (Adana University), N. Akdağ (Dicle University), E. Hammer (Harvard University), N. Hansen (GVSU), M. Bagazinski (GVSU), A. Schlossen (GVSU), K. Erdman (GVSU), A. Oakley (GVSU), G. Johnson (GVSU), and M. Özgür (Diyarbakır Museum). The paleobotanical samples have been analysed by M.M. Halde at the National Museum of Copenhagen.

Finally, our deepest gratitude goes to Mehmet Bey (our driver) and the people of Ahmetli Köy, Sahinler, and Merdan Köy for their participation in the project.

## HIRBEMERDON TEPE: THE CHRONOLOGICAL SEQUENCE

Nicola Laneri

Hirbemerdon Tepe is a site with an extension of about 10 ha. located along the western bank of the upper Tigris river valley, approximately 100 km to the southeast of the modern city of Diyarbakır (Turkey) (Fig. 29). The geological morphology of the area (Doyuran et al. 2001) has caused the site to be separated into distinct areas: the High Mound, which is marked by a high rising limestone bluff, and the Lower and Outer Town, which lay respectively on the western and eastern sections of the river terrace underneath the acropolis of the High Mound (Fig. 1). Following two preliminary seasons of magnetic and reconnaissance survey (Laneri 2005 and 2006), the subsequent seasons of excavation have strived to test these results through the creation of a reliable relative chronology based on the site's stratigraphy and the analysis of the discovered material culture.

Guided by the results of the preliminary work, the decision was made to investigate the Outer and Lower Town through the performance of two deep soundings, whereas in the High Mound (Area A) a program of extensive excavation was implemented.<sup>2</sup> Through this work it is now possible to identify the stratigraphic sequences of the different areas, and, consequentially, the chronology of the occupation at Hirbemerdon Tepe.<sup>3</sup>

### Chalcolithic

The earliest phase of occupation found at Hirbemerdon Tepe dates to the first half of the fourth millennium BC and is characterized by a locally produced type of Chaff-faced Ware (Laneri et al. 2006: 158-159). This pottery assemblage was found only in the Outer Town (Area B) and due to river erosion and flooding its archaeological context is highly disturbed and it is very difficult to associate forms with architectural features. In the year 2005, the archaeologists were able to identify a large pit with evidence of burning that yielded the highest percentage of pottery. Although the remains of a few rows of mud-brick walls were found in 2006, it was not possible to reconstruct house plans or the presence of other architectural features. A high density of pottery sherds and some complete vessels were, however, collected. The analysis of the recovered pottery has shown the presence of hammerhead bowls with simple flat rims slightly thickened externally or internally; hammerhead bowls with in-turned thickened bevelled rims; cooking pots and casseroles with a straight or slightly everted blunt or rounded rim and medium width mouths; storage jars with internal corrugations on the interior of the neck; and hole-mouth jars with straight upper walls and slightly thickened ledged rims that are

<sup>2</sup> The preliminary results of the excavations in Area B and C have been published or are under publication in other journals, whereas the results of the excavations of the Middle Bronze Age 'architectural complex' located in the High Mound (Area A) are discussed here.

<sup>3</sup> Due to the fact that the sounding in the Lower Town (Area C) did not offer a reliable stratigraphic sequence, this section is mainly focused on summarizing the results from the Outer Town and the High Mound.



characteristic of the Late Chalcolithic 3 horizon found at sites in the northern Mesopotamian and southeastern Anatolian regions (Laneri et al. forthcoming).

### **Late third and first half of the second millennium BC**

The successive phase of occupation belongs to a period that initiated during the late third millennium and continued throughout the Middle Bronze Age, when the site reached its maximum expansion. It is during this phase that the ‘architectural complex’ was built on top of the High Mound, whereas the Outer Town was characterized by the presence of architectural features built on top of a series of stone platforms that served to solidify and protect the area from the flooding of Tigris river.<sup>4</sup> These stone platforms functioned as supports for the construction of stone walls, which were built using a mixture of medium-size limestone and river pebbles and served to separate open working areas or animal stables. This architectural plan was continuously used throughout the entire Middle Bronze Age period. Thus, during this long chronological period the Outer Town appears to have been dedicated to specialized working activities that in the Middle Bronze Age were most probably coordinated with those performed in the ‘architectural complex’ on the High Mound. In terms of pottery production, the Dark Rimmed Orange Bowls (hereinafter DROB) and an earlier version of the Red Brown Wash Ware (hereinafter RBWW) are the key markers for the definition of a late third millennium BC horizon (Sub-phase B) at Hirbemerdon Tepe, as well as at other sites of the upper Tigris river valley and northern Syria (Oates et al. 2001: 161-162, 164, fig. 401, Ökse and Görmüş 2006: 170-175, 186-187); whereas a later RBWW assemblage, marked by the ubiquitous presence of carenated shapes and storage jars decorated with applied (e.g., rimmed bands, circles) and incised decorative patterns (e.g., wavy lines, semi-circles, triangles) (ibid. 2006: 187-189, figs. 31, 44), distinguishes the Middle Bronze Age phase. Both in the Outer Town and the ‘architectural complex’ in the High Mound the RBWW assemblage of the Middle Bronze Age (Sub-phase A) is repeatedly associated with the so-called ‘Pseudo-Khabur’ Ware, Common Ware, Grey Ware, and Cooking Ware.

During the Middle Bronze Age the site was abandoned. Despite the presence of a few scattered fragments of painted pottery typical of the ‘younger’ Khabur Ware and Nuzi Ware horizon (Stein 1984) found in association with the continuous presence of the RBWW assemblage in the High Mound<sup>5</sup> (Ökse and Görmüş 2006: 190, fig. 6), no proper settlement can be found for this specific period. In addition, five radiocarbon dates from sealed occupational and abandonment layers have enabled the archaeologists to rely on absolute dates for the period of the ‘architectural complex’s’ occupation and subsequent abandonment (Fig. 2). These dates are consistent (from 2010 to 1416 BC) and show similarities with radiocarbon dates from other architectural complexes of the Middle Bronze Age from the upper Tigris river valley (Ziyaret Tepe’s ‘Brightly Burned

<sup>4</sup> Due to presence of two foundation deposits embedded in the platforms and discovered during 2005 and 2006, these platforms appear to have been of fundamental importance to the communities inhabiting the site during this specific period.

<sup>5</sup> Due to river flooding or erosion provoked by the construction of architectural features belonging to the Iron Age, this phase of abandonment is not recognizable in the Outer Town.

Building,' XVII-XVI century BC, Matney and Rainville 2005: 21-23; Salat Tepe's 'Monumental Building,' XVII-XVI century BC, Ökse and Görmüş 2006: 188, fig. 48; the Middle Bronze Age buildings at Kenan Tepe, XIX-XVII century BC, Parker et al. 2004: 588). In addition, this thick abandonment layer dates to the end of the Middle Bronze Age and the subsequent Late Bronze Age, the later of which is characterized by a series of incoherent lenses of ash with the presence of wild animal bones (mostly *cervidae*), suggesting the presence of temporary camps for hunting during this specific period.

## Iron Age

After a long period of abandonment, the site was re-occupied probably at the end of the second millennium BC (Early Iron Age). In the High Mound, this phase is distinguished by the presence of badly disturbed buildings with stone foundations, stone-paved and compacted clay floors, and a series of pits and silos. In the Outer Town, the vicinity of the Iron Age levels to the plowing area has caused the destruction of most of the remains, leaving only a few objects that can be associated with this phase. In addition, this archaeological phase can be divided into two different sub-periods.

The earliest sub-period is characterized by a series of rooms beginning with a main courtyard paved with flagstones, followed by three adjoining rooms with compacted clay floors.<sup>6</sup> Inside the rooms, benches and other elements for working activities (e.g., grinding stones and drains) and two *tannur* (L. 47, 463, 464, 469) are recognizable. This phase is additionally marked by numerous pits (e.g. L. 505/506) that are also typical of the following phase. However, due to poor preservation, it has not been possible to reconstruct a complete house plan for this phase. In terms of the material culture recovered both in the Outer Town and the High Mound, the pottery assemblages consist of types that belong to a local Anatolian production (e.g., Grooved Ware, jars with painted triangles, small holemouth jars slightly burnished on the exterior, a spouted jar, and a small Plain Simple Ware jar with a knobbed decoration along the rim) and some elements of the Neo-Assyrian horizon (e.g., some bowls of the Neo-Assyrian Common Ware types, two grooved basalt grinding mauls and a basalt bowl with a ring-base and grooved rim) (see Anastasio 1999; Blaylock 1999; Schachner 2002a).

During the most recent archaeological campaign, a later sub-period of this archaeological phase was discovered on top of the construction phase of the Early Iron Age period. Based on the material culture found in context, this phase can be considered as belonging to a Late Iron Age/Hellenistic horizon (ca. VI to IV century BC). The architectural features are difficult to recognize and include only a few scattered walls and remains of floors, and instead numerous pits and silos<sup>7</sup> for storing grains and ceramic containers were found associated with this occupational level. These pits are contemporaneous with some found during the previous seasons and are marked by the ubiquitous presence of whole vessels and pottery sherd types (e.g., jars with a decorative pattern consisting of painted triangles along the shoulder, Laneri et al. 2006: fig. 13)

<sup>6</sup> It is interesting to notice that the walls of these rooms are built on top of the collapsed walls of the MBA 'architectural complex'.

<sup>7</sup> After their abandonment, some of these silos were filled with medium-size stones.

commonly found in the upper Tigris river valley region. *Comparanda* for these ceramic containers can be found in good archaeological contexts dated to a post-Neo-Assyrian horizon at Ziyaret Tepe and Salat Tepe (Ökse and Görmüş 2006: 191, fig. 42). In addition, a badly disturbed cist grave (L. 490) was located underneath one of the previously mentioned walls. Found inside the cist grave was an infant laying on his/her side in a fetal position and with funerary goods consisting of a pair of bronze earrings and a necklace made of faience beads (Fig. 3).

### Medieval/Islamic

The last occupational phase at Hirbemerdon Tepe is recognizable only in the High Mound, where a few sherds belonging to an uncertain Medieval period (XII to XIV century AD) were found, including Glazed Ware, Incised Ware, and Ottoman period tobacco pipes.

### THE 'ARCHITECTURAL COMPLEX' IN THE HIGH MOUND

Stefano Valentini and Nicola Laneri

The 'architectural complex' of the Middle Bronze Age (Sub-phase A) is the most important feature discovered at Hirbemerdon Tepe (Fig. 4). Approximately 750 sqm of its total extension have been uncovered since the beginning of its excavation in 2005. In ancient times, the complex occupied the entire acropolis on the High Mound and was presumably built following a coherent plan. When the complex was originally constructed it was necessary to reduce the unevenness of the High Mound by filling natural depressions with dirt and adopting a system of terraces. This type of architectural planning is demonstrated by the fact that numerous walls used the natural bedrock as foundations (e.g., Building O, room 41; Building P, rooms 45-46), whereas the virgin soil was used as the main floor in several rooms (e.g., Building M, room 35; Building O, room 41; Building I, room 24).

In terms of construction technique, the walls were built using stone foundations that extend from 30 to 120 cm above the floor level, with a superstructure in pisè and/or mud-brick. The stone foundations are composed of river pebbles and medium-size limestone blocks with mud used as the mortar. The archaeological record shows that the inner sides of the walls were plastered with mud (e.g., Building C, room 8), whereas the roofing was probably composed of wooden beams covered by reeds and chaff.<sup>8</sup> In a few cases (Buildings B-D) the wall foundations are dug into the virgin soil, but for the most part they lie directly on top of it.<sup>9</sup> The floors recognizable following the first seasons of

<sup>8</sup> The negative pattern of reeds and chaff was found in Buildings N (room 38) and G (room 51).

<sup>9</sup> The use of this building technique is still visible when visiting the modern villages in the region. It is also interesting to note that the closer we get to the uplands, the higher use of limestone blocks is noticeable. This demonstrates the importance of available resources in decision making for the construction adopted both in ancient and modern times.

archaeological work in the ‘architectural complex’ can be differentiated as the following four types: virgin soil; compacted clay; river pebbles; and flat flagstones.<sup>10</sup> As noted in the previous preliminary report (Laneri et al. 2006), the hydraulic system used for the ‘architectural complex’ was planned with a high attention to detail, necessary because of the local environmental conditions and, in particular, a high percentage of annual rainfall that characterizes this region. In fact, the presence of the natural limestone bedrock with steep slopes underneath the ‘architectural complex’ would have required a system necessary for diverting rain waters from the complex. Moreover, the potential for damage caused by rainfall is recognizable in the collapse of the walls of the Southwestern sector.

In terms of architectural planning, the overall layout of the ‘architectural complex’ is organized following two main perpendicular axes that divide the complex into a series of sectors composed of a system of agglutinated buildings each separated by the presence of double walls. In addition, the two main axes are formed by outdoor spaces that consist of a long, wide alley running from NE to SW and the combination of a staircase and an open space (*piazza*) along the NW-SE axis. The presence of these axes creates an overall framework for the complex, which can be divided into three major sectors – the Northern, the Western, and the Southeastern.

The division of the complex into three distinct sectors appears to be related to the function each sector played in the overall economy of the site. For instance, the Western and Northern sectors seem to have been used for productive activities, whereas the Southeastern one and the *piazza* were dedicated to ceremonial activities. This assumption is based on planimetric differences and the diversity of the artifacts discovered within the ceremonial area, such as human and animal figurines, highly decorated vessels, and decorated votive clay plaques (Figs. 6-7); while the other buildings of the ‘architectural complex’ show a clear pattern of processing and storing food (i.e., grains and grapes) as demonstrated by the discovery of stone tools (e.g., grinding stones, pestles, mortars, benches), storage vessels and cooking ware found *in situ*.

Let us now turn to a detailed analysis of each sector and the architectural features found within the ‘architectural complex.’

### **Outdoor spaces (staircase, alley, and *piazza*)**

The staircase was probably part of the main entrance to the ‘architectural complex’. It is flanked by two radial walls and has benches on both sides. A series of steps leads to a small room, which functioned as an intersection between the Western sector, one of the buildings of the Northern sector (Building A), the *piazza*, and the stone paved alley. In addition, a drain is located on the southeastern side of the staircase,<sup>11</sup> whereas Building C of the Northern sector is on the other side. A small sounding performed at the bottom of the staircase has also confirmed the presence of a corridor running parallel to the main alleyway. This corridor functioned as both the northern limit

<sup>10</sup> In a previous report (Laneri et al. 2006), we distinguished a difference in floors as related to a difference in roofed versus unroofed rooms. This distinction does not appear to be consistent throughout the complex, and so we decided to discard this type of interpretation.

<sup>11</sup> The drain is the continuation of the one coming from the main alley.

of the Northern sector and as a passageway for the buildings of this sector and the other one located north of the corridor.

The main alley (47) is the principal axis of the complex's road system and leads towards the other buildings located in the direction of the Tigris river.<sup>12</sup> The alley is composed of a wide sidewalk (ca. 1 m) and a deep canal (ca. 1 m in width and 1 m deep) which was used in ancient times for draining the waters and as a place for discarding trash deposits. This assumption is based on the discovery of a high density of broken objects (e.g., decorated portable hearths, molds for the making of shaft-hole axes, elongated clay objects, etc.), pottery, and animal bones found in the filling (L. 225). Moreover, each building of the Northern sector has a door on the alley's sidewalk. A footpath to access the only entrance to the Southeastern sector was created by filling the drainage canal with large stones. On its southwestern limit, the alley leads to the staircase and, in the other direction, to a path flanking the southwestern edge of the open space (*piazza*).

The main outdoor space (*piazza*, 35) has been only partially excavated and it probably extends towards the south where the excavation bulk is currently located. The *piazza* consists of a large square space showing two construction sub-phases. In fact, a wall was built along the main alley in a later sub-phase in order to prevent water from entering the *piazza*. The problem of flooding water was due to a steep slope in the *piazza* that, as noticed from the archaeological excavation, was north to south and with a direction different from the rest of the 'architectural complex' (i.e., south to north). This difference in slope was due to the natural layout of the area as demonstrated by the use of the virgin soil as the floor for the whole outdoor space. As mentioned before, along the southwestern edge the *piazza* had a raised walking path composed of river pebbles and fragmented potsherds. An elliptically-shaped stone basin abuts the path and is built on top of the virgin soil. On the opposite side of the *piazza* a sort of staircase-buttress flanking the Southeastern sector was discovered. This feature had a double function facilitating circulation as well as protecting the building on the western side from stress provoked by the flow of rain between the wall foundations and the natural bedrock. This kind of structural stress is recognizable in the way both the elliptical basin and the southern wall of the Southeastern sector collapsed. It is along this wall that the archaeologists have been able to define another alley starting from the *piazza* and leading towards the centre of the acropolis in the High Mound.<sup>13</sup>

In terms of its function within the 'architectural complex', the *piazza* was likely to have served as an outer ceremonial space and was probably associated with the Southeastern sector which, as will be described later, had some features clearly associated with ritual/ceremonial activities. Moreover, the interpretation of this space as having had a ceremonial function is based on the type of material culture found on the floor (L. 408) and discarded in ancient times, such as numerous decorated clay votive plaques, animal and human figurines, and vessels decorated with both painted and incised/stamped

<sup>12</sup> The alley is easily recognizable in the magnetic survey for at least 30 meters.

<sup>13</sup> This area was not thoroughly excavated in 2007 and only the 2008 season will give further information on its function.

decorations (Figs. 6-7). In addition, most of these objects were found in the vicinity of the above-mentioned elliptical basin and show evidence of ancient breakages.

### **The southeastern sector**

As previously noted, this sector has its main entrance on the alley (47). The door-socket is still *in situ* and shows signs of heavy wear. At the entrance, a small room (23) paved with flagstone served as a connector to the main long room and, on the left, to a narrow corridor (49) accessible by two steps. The floor of this corridor is the compacted virgin soil. The corridor leads towards a small storage room (48) with a floor that is similar to that of the corridor. Discovered within this small room were a stone bench and two niches probably used to store products contained inside ceramic vessels. Next to this room is a small room (50) characterized by the presence of a large stone and a series of vertical and horizontal drains built within the wall. In addition, a flat stone corbel on the wall has allowed the archaeologists to assume that the whole system was probably part of a working process involving the use of water or other liquids. To the south of room 50, a door leads towards an L-shaped working area (22). In fact, two stone benches, two stone mortars with pestles, a niche, and a plastered circular and hollowed recess were found on the northern side of this room. A door connects this area to room 52. This room has been only partially excavated, but due to the high density of burnt material it can be interpreted as the remains of the kitchen for the sector.

However, room 51 was the most important element of the entire sector (Fig. 5). Due to its size (the largest room of the 'architectural complex', ca. 5,50x3,50 m), the monumentality of its outer stone walls and the stones composing the floor, the presence of an 'altar constructed of medium-sized stones, grinding stones, and mud-bricks positioned almost at the centre of the room, and a foundation ritual deposit of a fine RBWW cup (Fig. 8) containing piglet bones in the northeastern section of the room, this sector can be interpreted as a ceremonial area. Furthermore, behind the 'altar' two perpendicular drains are inserted into the stone pavement, which probably served to drain ceremonial liquids outside of the room. It is interesting to note that this room is marked by the use of a high quality plaster applied on the inner surface of the walls and by the almost total absence of material culture, which is quite unusual in the 'architectural complex'. Another important aspect of this long room is represented by its height in relation to the *piazza*, where most of the votive material culture was found. In terms of architectural phases, this long room shows a later reconstruction in which the southeastern wall was reconstructed using mud-bricks placed about 1.5 meters inside the room after the collapse of the main stone wall. Due to the construction of this wall, the drainage system was changed and the two previous drains were closed and replaced by only one directed towards the southeast.

East to this building, three rooms (24, 25, and 26) were discovered that have doors and, in two cases, double walls. Moreover, these rooms were most probably used as storage rooms and contained stone benches, a high number of stone tools and storage jars. These rooms were most likely accessed from the roof and were probably used as storage facilities for the whole Southeastern complex. A similar layout of space is recognizable in



the Middle Bronze Age levels of Mohammed Diyab in northern Iraq, where storage rooms with double walls were located in the vicinity of a ceremonial building (Nicolle 2006: 77, 83, 87, 91, 94).

### **The western sector**

This sector is secluded from the rest of the complex by the *piazza* and the staircase on one side, and along the western edge it interfaces with the emerging natural bedrock and was therefore probably the limit of the ‘architectural complex’ too.<sup>14</sup> The layout of the sector seems to be composed of a northern and a southern wing, the later of which is positioned at a higher level. The two areas are connected by a staircase accessible from room 40 of Building N and room 1b of Building A. Moreover, the southern section of this sector consists of two buildings (N and O). Building N has one long room (38) lying next to the pathway of the main outdoor space (*piazza*) with a door connecting it to a corridor that is mostly in an unexcavated area. The excavated part of this corridor yielded numerous large sherds of smashed storage jars of the RBWW assemblage, whereas room 38 has a compacted clay floor on top of which mortars and grinding stones were found *in situ*. To the west of this room is Building O, which consists of a small storage room (39) and a working room (40), both of which have flagstone paved floors. From this room, a poorly preserved door leads towards a large room with a compacted clay floor. Due to its poor state of preservation, the function of this room is still unclear.

The northern section of the sector is accessible from outside (3) by a few steps and a threshold that contains an *in situ* door socket. The first building (A) had its northern limits washed away and in ancient times was used for processing and temporarily storing foods, as evidenced by numerous objects found *in situ* (e.g., mortars and pestles, grinding stones, decorated portable hearths, cooking and storage jars). The two rooms of this building (1a and 1b) are separated by a small stone wall. Room 1b yielded a higher density of working tools and most of the storage jars were placed on top of a bench made of medium-to-small size stones. The western Building P was composed of 6 small rooms. Room 42 has architectural features connected with working activities (i.e., a bench with small stones and river pebbles and a plastered recess) and part of its floor is white washed; room 43 has a compacted clay floor and was presumably used for storage, due to the high density of storage jars of the RBWW assemblage placed on top of benches and in a niche. The presence of grinding stones, mortars and pestles in rooms 44 and 45 allows the archaeologists to interpret this room as an area for processing cereals, whereas the RBWW storage jars in room 46 were used to store the processed food.

### **The northern sector**

The last sector was utilized for working activities and is composed of a series of agglutinated long Buildings (C, D, E, F, J, K and L) divided by double walls, each with an entrance from the main alley (47), and, most likely, an exit into the northern corridor

<sup>14</sup> This assumption is based on the intermingling of mid-size stones with an emerging spike of limestone rock in constructing the western limit of the sector.

(e.g., door in room 32) that starts from the staircase. The sector includes a series of other buildings towards the northeast, as is clearly demonstrated by the images obtained through the magnetic survey in 2004.

Building C lies next to the staircase. From the alley 47, two long rooms (6 and 7, both paved with river pebbles) served as the entrance to the building. From this entrance, it was possible to access the southeastern wing of the building that includes two rooms (8 and 9) and was used as a large kitchen area as indicated by the high density of cooking pots (ca. fifteen) and traces of fire use inside room 8.<sup>15</sup> The northwestern wing of the Building is formed by two rooms (10 and 11), in which fragments of large storage jars of the RBWW were found on top of the river pebbled paved floor.<sup>16</sup>

Building D has a large entrance from alley 47 and is paved with flagstones. This room connects to two small rooms (14 and 15), each paved with compacted clay and containing a mortar and pestle.<sup>17</sup> The remaining rooms (12 and 13) of the building are poorly preserved, but the presence of storage jars of the RBWW assemblage can again be used to interpret these rooms as storage facilities.

Building E has two entrances from alley 47. Both doors lead to a square room (16) paved with flagstones and river pebbles. Next to this room is room 17, which appears to have been created in a later phase through the construction of a separating wall. Thus, the two rooms (16 and 17) were originally part of one large room that was used either as a storage area or stable.

Buildings F, J, K, and L show the repetition of a similar layout that consists of rooms used for working activities<sup>18</sup> near the alley and as temporary storage facilities in the back. A room paved with flagstones is located in the centre of each building (e.g., rooms 19, 28, 32a, 34), all of which probably functioned as sources of light for the other rooms in the building. This hypothesis is confirmed by the absence of roofing as well as the limited presence of stone tools and storage jars. Thus, we can assume that each unit functioned as a small productive chain in which the production and storage of specific commodities (e.g., cereals, grapes) was performed.<sup>19</sup> Within this perspective, the high density of seeds and the whole fruit of *Vitis Vinifera* (grape) in room 27a-b can allow us to interpret the curved stone bench in the corner of the room as part of a productive unit dedicated to processing grape-related liquids (i.e., production of wine). Moreover, the presence of stone basins or benches used for processing grapes adjacent to the main alley has strong similarities with the late third millennium BC private dwellings at Titriş Höyük, where rounded plaster basins were used for similar purposes (Algaze et al. 2001).

<sup>15</sup> In this case, the term 'kitchen' can be used to indicate either an area for cooking or toasting cereals and/or grains.

<sup>16</sup> It is important to highlight that the building's northern edge has been completely washed away.

<sup>17</sup> The small size of these rooms allows the archaeologists to hypothesize that children were involved in working activities. The presence of children in the production of textiles is also confirmed by southern Mesopotamian texts of the early second millennium BC.

<sup>18</sup> These rooms contained stone tools (e.g., mortars and pestles, grinding stones, etc.) and benches.

<sup>19</sup> It is still difficult to define the exact type of production performed in each building. For example, the presence of a drain linked to a semi-circular grinding stone in room 20 allows the archaeologists to interpret its function as related to the use of water (e.g., washing textiles).

*Preliminary conclusive remarks*

In conclusion, the ‘architectural complex’ contains elements that resemble those typical of a developing complex society in which ceremonial and specialized working activities are situated side by side. This type of architectural planning appears to have similarities with other complexes located in the upper Tigris river valley as can be demonstrated by the recent discovery of the ‘monumental building’ at the site of Salat Tepe (Ökse 2006, Ökse and Görmüş 2006). In addition, other architectural elements can be used to compare the complex to other Middle Bronze Age sites located in other Anatolian regions as well as in northern Mesopotamia (e.g., Kültepe, Girnavaz, Tell Rijim, and Mohammed Diyab, Özgüç 2003, Erkanal 1991; Kolinski 2000, Nicolle 2006).

## PRELIMINARY ANALYSIS OF THE POTTERY ASSEMBLAGE FROM THE ARCHITECTURAL COMPLEX

Anacleto D’Agostino and Nicola Laneri

As previously mentioned, the late third and first half of the second millennia BC at Hirbemerdon Tepe is marked by the ubiquitous presence of the Red Brown Wash Ware (RBWW hereinafter) in both the Lower Town and the High Mound (Laneri et al. 2006: 156-164). In addition, it is also important to note that during the early phase of occupation of this broad chronological period (Sub-phase B), specific shapes of the RBWW assemblage appear repeatedly associated with the Dark Rimmed Orange Bowls (DROB hereinafter)<sup>20</sup>, as seen by their contemporaneous appearance both in the early levels of the sounding in the Outer Town (Area B) and in preparation layers below certain compacted clay floors of the ‘architectural complex’ (L.185 and 298).<sup>21</sup> In other archaeological contexts of the final phase of the third millennium BC the contemporaneous appearance of the DROB and RBWW assemblage point to a similar origin for these two classes of pottery (e.g., the post-Akkadian levels at Tell Brak, Oates et al. 2001, 152, fig. 185.d upper line, 161, 164, 162.192, 419.266-268, 453.627-629).

However, it is during the following Middle Bronze Age period (Sub-phase A) that the pottery assemblages at Hirbemerdon Tepe are consistently characterized by the presence of RBWW. During this period, the RBWW is associated with a ‘Pseudo-Khabur’ Ware assemblage (i.e., ‘Psuedo-Khabur’ Ware) and by the absence of DROB. Our major source of information for a detailed analysis of the pottery from this specific

<sup>20</sup> Recent petrographic analyses on samples of DROB from both northern Syria and southeastern Turkey have demonstrated that they were all produced in the Bismil-Diyarbakır region (Kıbaroğlu 2007). Moreover, we believe that the DROB’s decorative pattern has strong similarities with that of the RBWW and therefore were probably made using a combination of firing techniques in a reducing environment and an iron rich slip/wash.

<sup>21</sup> An unusual presence of a few sherds of the DROB assemblage was also found on the floors of some rooms located near the northern edge of the ‘architectural complex’ (e.g., rooms 39, 40, 32a, 30, 28, 46, 17, 43). Due to their location, the DROB can be either in context or, as considered in this article, residual material culture washed from earlier levels from the top of the mound. Future studies will further investigate this topic.

period comes from the 'architectural complex.' Therefore, this brief preliminary report will focus its attention on one of the loci of alley 47 (L. 225), which yielded the most representative sample for this period. Due to the fact that the alley was primarily used as a trash deposit for the material culture discarded from within the different buildings of the 'architectural complex,' we consider this locus as the most representative of our collection.

### The pottery assemblage from Alley 47 (L. 225)

Our sampling strategy foresees that all the sherds found in the excavation areas are collected and sorted by locus of provenience at the dig house. Here the pottery is washed and organised by wall thickness and temper, weighed, and collected in wooden crates and plastic bags. Then, the sherds are classified by wares and typological categories. Registration numbers are given only to complete vessels, rims, bases and sherds with decorative patterns. The registered object is then entered in our relational database (Arche, created in collaboration with Mario Mauro of Dotcom company). The majority of the numbered pieces are drawn and only a sample of the numbered pieces is photographed.

The entire *corpus* of pottery from the alley after sorting includes 549 sherds, 456 of which are diagnostic fragments (300 rim sherds, 58 bases and 92 wall sherds characterised by decorative patterns).<sup>22</sup> In addition, the repertoire recovered from the alley is composed of sherds belonging to the following categories: Red Brown Wash Ware (RBWW), Pseudo-Khabur Ware (PKW), Cooking Ware (CC), Common Ware (C), Grey Ware (GW), and a fragment of DROB to be considered as out of context.<sup>23</sup> Moreover, the following table defines the distribution of the different classes/wares and fabrics as related to the total diagnostic sherds found within the archaeological context of the 'architectural complex's alley 47:

Classes/Wares	sherds	
Red brown wash ware	344	75,44%
Pseudo-Khabur ware	57	12,50%
Cooking ware	23	5,04%
Common ware	23	5,04%
Grey ware	8	1,75%
Dark rimmed orange bowl	1	0,22%
<i>Total</i>	456	

Fabrics	sherds	
Very fine, 1	3	0,66%
Fine, 2	118	25,88%
Medium-fine, 3	73	16,01%
Medium, 4	240	52,63%
Medium-coarse, 5	14	3,07%
Coarse, 6	8	1,75%
<i>Total</i>	456	

<sup>22</sup> The total weight of sherds is 275 kg so classified: 168 Kg (37 kg of diagnostic sherds) of red-brown sherds, 73 Kg (15 kg of diagnostic sherds) of cooking pot fragments, 31 Kg of common sherds (4,5 kg of diagnostic sherds), 0,6 Kg of grey sherds, all diagnostics.

<sup>23</sup> Legend for the pottery catalogue: **N**: number of sherds as referred to the drawing in the figures; **W**: class/ware; **ST**: surface treatment; **Fa**: fabric; **Dec**: Decoration; **N/A**: the surface is badly encrusted.

*Classes/Wares:*

**RBWW:** As noticeable from the previous chart, the ubiquitous presence of the RBWW pottery throughout the overall assemblage discovered in alley 47 is quite impressive. More specifically, the types of RBWW can be briefly described as rounded bowls (Fig. 9.1-16) and bowls with a slight and low carination, and an inverted and embossed rim (Fig. 9.17-26, Fig. 10.27-32); small rounded bowls (Fig. 10.35-40); small-size (Fig. 10.42-44, 46-51) and medium-size carinated bowls (Fig. 11.61-64); deep bowls (Fig. 10.52-59); small carinated jars with a wide mouth and, in some cases, incised lines along the carination (Fig. 11.65-67); holemouth jars (Fig. 11.68-72); medium-size jars (Fig. 12.75.98, Fig. 13.106.111.116-118); storage jars (Fig. 14.146-168); and lids (Fig. 15.172-174). Among other types, we have classified body sherds and bases. Among the RBWW assemblage, the most interesting piece is a bowl decorated with a grape-cluster design (Fig. 15.162). This appears as a unique example of RBWW that can help archaeologists in setting comparisons with other early second millennium BC sites in northern Syria and central Anatolia (e.g., Tell Brak, Oates, Oates and McDonald 1997: fig. 82 & fig. 221.604, piece N. 604; Alishar Höyük, Von der Osten 1937: vol. 2, fig. 174.d2800 and e326, fig. 192.d2342; Kültepe, Özguç 1999: pl. 105.1.2).

In terms of specific properties, the RBWW repertoire is distinguished by a coat of wash or slip that covers either the upper or the totality of the outer and/or inner surface of the vessel. Even though preliminary chemical analyses on some samples of RBWW pottery (Laner et al. 2006: 168) confirm that the decoration is composed of a high concentration of hematite, silicone, aluminium and potassium, the precise composition of this coating is still not clear. However, drawing on these preliminary analyses, the surface decoration can be interpreted as a clay coating with a high density of iron minerals applied by brush by the potter prior to firing. In general the wash/slip is applied directly to the surface of the vessel; but in several cases the fragments show a self-slip under the coating. Due to its chemical composition, the wash/slip coating assumes different colours in relation to firing conditions. Often the inner part of the vessel conserves a buff colour and it is clear that it is the same stratum that on the outside has become red-brown: the process producing the coloured effect is not complete on the inner side.

In addition, almost all the sherds of the RBWW are smoothed, sometimes also creating a shiny appearance. The surface can appear wet smoothed or regularly washed/slipped. In terms of the shiny treatment, this affect is not believed to be from burnishing as no traces of burnishing marks have been revealed. Instead, the shiny effect visible in some fragments has been created by the careful smoothing or polishing of the vessel prior to firing in an oxidising atmosphere at high temperatures. Thus, this pyrotechnological method transforms the composition of the wash/slip solution, consequently decorating the vessels with a pattern of variegated colors that in some circumstances can appear shiny.

**Pseudo-Khabur Ware:** The types of this specific ware discovered at Hirbemerdon Tepe are jars with short necks and everted rims (Fig. 13.119-145). In addition, the rim can present a groove at the bottom, with a globular or slightly flattened jar body, and a series of painted bands of irregular width along the upper part of the vessel body. In one case, the decorative pattern consists of a series of triangles enclosed in horizontal lines (Fig.

15.163), while another example has a painted decoration with a grid-like pattern (Fig. 10.41).

This category of ware was first named ‘Pseudo-Khabur’ (Laneri et al. 2006: 163) for its close resemblance to the painted ware of northern Syria and Iraq (Stein 1984; Oguchi 1997). It is now clear, as was originally presumed, that this type of pottery was probably produced locally. This assumption is based on the high percentage of this ware within the Middle Bronze Age pottery assemblage, as well as the use of a type of wash/slip decoration for the bands and triangles that is very similar to that used for the RBWW assemblage.<sup>24</sup> In fact, the colors of the painted bands and triangles can range from red to black and, in some cases, the unevenness of firing has created variegated colors similar to those recognizable in the RBWW assemblage.

**Grey Ware:** At Hirbemerdon Tepe, this class of pottery is recognizable in a few fragments of bowls with straight rims and ring-bases. However, from alley 47 a few fragments of body sherds were found as well as a tall beaker with a ring-base, low carination, flaring walls, and two symmetrically positioned lugs along the rim. This vessel is unique in the ceramic repertoire of Hirbemerdon Tepe, and it resembles a bronze cup with two handles found in one of the temples of the *karum* level Ib at Kültepe (Özgül 1999: 121 and D5).

**Common Ware:** Lids with incised and applied decoration belong to this specific class (Fig. 15.164-171). Due to their diameters (ca. 18-25 cm.), these lids were probably used to protect the products contained in the cooking pots. Also included in this category are large body sherds without any distinctive decorative pattern.

**Cooking Ware:** The cooking pots consist of jars without necks or with short necks, wide mouths and embossed and slightly everted rims (Fig. 12.73.74.76-97.99, Fig. 13.100-105, 107-110, 112-115). In most cases small triangular lugs are present along the rim area. The fabric is coarse and has numerous mineral inclusions. Moreover, the cooking ware pots have outer surfaces that are smoothed or burnished.

#### *Fabrics:*

The following table summarizes the different fabrics (Fa) for each category of ware (see ‘Fa’ column in the pottery catalogue for the fabric of each sherd):

	RBWW		PKW		GW		DROB		C		CC	
Very fine, 1	2	0,58%							1	4,35%		
Fine, 2	95	27,62%	17	29,82%	5	62,50%	1	100%				
Medium-fine, 3	54	15,70%	13	22,81%	1	12,50%			3	13,04%	2	8,70%
Medium, 4	185	53,78%	27	47,37%	2	25,00%			13	56,52%	13	56,52%
Medium-coarse, 5	6	1,74%							3	13,04%	5	21,74%
Coarse, 6	2	0,58%							3	13,04%	3	13,04%
<i>Total</i>	344		57		8		1		23		23	

<sup>24</sup> Future objectives of the project are in-depth archaeometrical analysis of a broad sample of sherds of the RBWW and ‘Pseudo-Khabur’ Ware assemblages for a better understanding of the chemical composition of the decorative wash/slip and of the clay provenance.



During a preliminary analysis of the complete assemblage of diagnostic sherds, two general groups of tempers have been identified. The first group (1) is characterised by a medium to fine temper with mostly mineral particle inclusions and a low or very low amount of crushed vegetal inclusions. The second group (2) consists of a medium temper with primarily vegetal elements and a lower quantity of mineral particles. Very fine particles of sand, mica, white limestone or calcareous particles comprise the mineral inclusions, while the vegetal inclusions are instead composed of crushed straw and chaff. In general, the size of the inclusions is very small (e.g., less than a millimetre for minerals and ca. 1x5 mm for chaff).

In addition, the composition of the fabric of the Cooking Ware vessels is more complex in terms of the mineral temper, and can vary as follow:

- 1) medium temper, sand, mica, grits (thickness around 1mm, density of 10%), calcareous particles;
- 2) coarse temper, sand, mica, grits (thickness between 1 mm and 2 mm, density of 10%), calcareous particles;
- 3) medium temper, sand, mica, grits (thickness around 1 mm, density of 10%), dense paste;
- 4) medium temper, sand, chaff, mica, sporadic grits (thickness around 1 mm, density less than 2%);
- 5) medium-fine temper, sand, calcareous particles, mica, sporadic grits (thickness less than 1 mm, density less than 2%), dense paste;
- 6) medium-fine temper, sand, abundant calcareous particles (density greater than 50%), mica, sporadic grits (thickness less than 1 mm, density less than 2%), dense paste.

#### *Surface treatments:*

The sherds found in alley 47 include the following range of surface treatments (see 'ST' column in the pottery catalogue): 1a) wash/slip, medium smoothed (78,07%), 1b) carefully smoothed (2,19%), 1c) rough smoothed (0,22%); 2a) self-slip, smoothed (6,80%), 2b) carefully smoothed (1,10%); 3) smoothing (6,14%); 4) burnishing (4,17%); 5) smoothing and burnishing (0,44%); 6) slip/self-slip and burnishing (0,22%); 0) no surface treatment (0,66). In particular, the burnishing appears to be consistently associated with the production of Grey Ware as is clearly recognizable in the case of the tall beaker with low carination and lugs attached to the rim. The following chart provides an outline of surface treatments as related to class categories.

ST	RBWW		PKW		GW	C		DROB	CC		
1a	325	94,48%	23	40,35%		3	13,04%	1	100%	4	17,39%
1b	10	2,91%									
1c						1	4,35%				
2a	3	0,87%	22			5	21,74%			1	4,35%
2b			2	3,51%		3	13,04%				
3	4	1,16%	10		1	12,50%	11	47,83%		2	8,70%
4					6	75,00%				13	56,52%
5					1	12,50%				1	4,35%
6										1	4,35%
0	2	0,58%								1	4,35%
Total	344		57		8	23		1		23	

### *Decorations:*

For the RBWW, the wash/slip coating can cover the entire exterior surface of the pot (34,33%), only the upper part of the exterior surface (1%), both the exterior and interior surfaces (44%), the exterior surface and part of the interior, often the rim (20,67%), and also, but not from alley 47's repertoire, the exterior surface above the carination, and the exterior rim. Moreover, the surface colour varies between buff-red to black in different nuances. In addition, three kinds of surface treatment have been noted (see 'Dec' column in the pottery catalogue): 1) mat red-brown surface, coverage uniform; 2) shiny, lustrous, red-brown surface, coverage uniform ; 3) mat red-brown surface, brush traces, coverage uneven. From among the other types of decorations, incised and applied decorative patterns are also recognizable in the storage jars of the RBWW assemblage: horizontal grooves (71 sherds), horizontal grooved ribs (3 sherds), horizontal grooves and wavy lines (1 sherd), circles, wavy lines, horizontal grooves (1 sherd), wavy lines (1 sherd). For the 'Pseudo-Khabur' Ware, decorative patterns consist of horizontal bands (12 sherds), triangular patterns of linear cross-hatching (1 sherd), and grids (1 sherd).

### **Conclusive remarks**

The assemblage of pottery discovered in alley 47 is a good sample that can help us in defining a relative chronological framework for both the site and the region. In fact, most of the pottery categories here described have clear parallels with repertoires from contemporaneous Middle Bronze Age sites of the upper Tigris river valley. Moreover, the pottery assemblage here presented clearly recall examples from other contemporaneous sites in the region such as Üçtepe (Özfirat 2006: 19-32), Giricano (Schachner 2002b: 47), Ziyaret Tepe (Matney and Rainville 2005: 22), Kenan Tepe (Parker e Dodd 2003), Kavuşan Höyük (Közbe et al. 2004: 469), and Salat Tepe (Ökse and Görmüş 2006). The presence of specific types (e.g., the tall beaker and the bowl with grape-clustered decorative pattern, as well as the 'Pseudo-Khabur' Ware) is also indicative of cultural and economic exchanges with central Anatolia and northern Mesopotamia. In conclusion, this brief preliminary report on one specific context of the 'architectural complex' (e.g., alley 47) is intended to give a first glimpse of the pottery yielded from this important structure discovered at the site of Hirbemerdon Tepe.

### **PRELIMINARY ANALYSIS OF THE GROUND-STONE ARTIFACTS**

Mark Schwartz

The analysis of the ground-stone artifacts is a key element in the reconstruction of the ancient production economy at the site. Some scholars have correctly pointed out that artifact form does not necessarily correlate with the initial function of the tool. Use wear analysis and chemical characterization of residues are necessary to accurately determine the specific utilization of an ancient tool in antiquity (Davis 1998). Combined with spatial analyses of site distribution, one can examine the organization of production activities on

both a micro and macro scale. Preliminary investigations of the ground-stone tools from Hirbemerdon Tepe have generated suggestive results and formed the basis for future research.

While tool morphology does not imply a specific use, it can suggest a general subsistence or production strategy (Wright 1994). To this end, a basic typology was constructed employing the general concepts of previous research in the Near East (Wright 1996, Davis 1998). Type 1 consists of “mortars”, (Fig. 16) round or circular stones with a large isolated central depression. Type 2 or “grinding slabs” are oval, ellipsoid elongated stones with wear on one side, often more worn in the central area demonstrating use parallel to the long axis. Type 3, “pestles” are small ovate cylindrical stones with rounded ends. Type 4, “loomweights” vary in size but usually are circular stones with a central hole, created from drilling on both faces. Type 5 consists of large flat stones that may have been used for smoothing. Type 6 is comprised of circular disk shaped stones that seem to be related to use of an oven installation. Type 7 artifacts are ground-stones with a central groove that are typically found in the Iron Age. Small rectilinear or circular stones with a slight central depression are classified as Type 8 artifacts and were most likely door sockets. Spherical pounding stones with unifacial wear patterns are grouped under the heading Type 9 tools.

The majority of the grinding stones date to the Middle Bronze Age and were found in the architectural complex of the High Mound. Use was roughly estimated through visual observation of the surfaces bearing wear patterns and ranged from pieces showing no demonstrable use to heavily worn grinding tools such as mortars with holes in the central depressions. Analyses of artifact materials (Fig. 17) suggest preferences in regards to the stones utilized for specific tools. In general, limestone was employed for mortars, both basalt and limestone for grinders and dense hard stones for pestles. It is assumed that choices of materials were based on both the availability and utility of each stone for a specific function.

Spatial analyses examined the location of ground-stone artifacts (Fig. 18) in order to assess room function and the organization of production in the architectural complex of the high mound. Preliminary distribution investigations (Fig. 19) of ground-stone artifacts and large storage vessels seems to indicate that the processing of materials was organized in such a way that specific rooms were used for specific purposes. An examination of the northeast section of the site (Fig. 20) reveals two agglutinated adjoining rooms (rooms 29 and 20) with identical architectural plans and similar placement of ground-stone artifacts. In general while there is some overlap, it appears that activities were segregated spatially with production and storage occurring in distinct areas. Smaller niche-like rooms (rooms 33, 34, 29, 21, 20, 17, 15, 14, 13, 12, 11, 8) were usually relegated to the use of grinding-stones while large rooms closer to the main avenue (rooms 27, 18, 16) of the complex were employed for storage.

Preliminary analyses of the architectural complex (Fig. 20) suggest that the agglutinated rooms were designed to serve a precise chain of production steps including grinding, processing and storage. Analyses of ground-stone artifacts seem to support this conclusion and further demonstrate that activities within the architectural complex were organized within the built space of the settlement. Future research will focus on

examining use-wear patterns that could indicate the ways in which these tools were employed. Residue samples can potentially identify starches and other compounds that will further elaborate on the use of these ancient tools. Petrographic analyses will aim to identify geological source materials and help reconstruct ancient procurement strategies. By then combining these analyses with spatial data on the artifact's provenience in the architectural complex and related features such as pottery, it will be possible to identify the function of individual rooms within structures. With this information we can then address basic questions concerning what was being produced at the site, how production was organized and/or controlled and how this relates to the economic system that existed at the site in prehistory.

#### MIDDLE BRONZE AGE CHARRED PLANT REMAINS FROM THE 'ARCHITECTURAL COMPLEX'

Mette Marie Hald

Archaeobotanical material is a potential source of information on the ancient agricultural economy of a settlement, including the practices of storage and distribution of agricultural goods, and the layout of structures, and it is also potentially informative regarding the character of the surrounding environment. During the excavations at Hirbemerdon Tepe, soil samples have been processed regularly by manual flotation in order to recover charred plant remains. Sample volumes range from 1.4 to 54 litres (Table 1). The samples from Hirbemerdon Tepe were scanned at the Natural Science Research Unit (NNU) at the National Museum in Copenhagen to assess the contents and richness of the archaeobotanical material on the site. The contents of 23 samples that were subsequently analysed are presented here.

Identification of the plant remains was made using a stereomicroscope with magnification up to x100, and with the aid of modern seed reference material and standard seed atlases. Nomenclature follows the Flora of Iraq. Quantification of the plant remains was as follows: embryo ends represent cereal grains, spikelet forks were counted as two glume bases. In the case of fragmented grape pips, a "minimum number of seeds" was estimated.

The samples derive primarily from fill above floors in rooms within the 'architectural complex' in Area A and date to the Middle Bronze Age. The rooms are suggested by the excavators to have been used for the processing and storage of food.

The charred plant remains observed in the samples consist of cereal grains, barley (*Hordeum sativum*), emmer wheat (*Triticum dicoccum*) and a single find of oats (*Avena sativa*); emmer wheat chaff, pulses such as lentils (*Lens culinaris*), and grape seeds (*Vitis vinifera*) as well as the whole fruit of a grape and fragments of grape mesocarp. Among the wild taxa, grasses, and taxa such as *Rumex* sp., *Galium* sp. and Leguminosae including *Trigonella* and *Trifolium* sp. are the most common (see Table 1).

The samples are relatively poor in contents; the density of the samples, i.e. the number of charred plant remains per processed litre of soil, is low, often less than one plant item/litre (see Table 1). This indicates that the archaeobotanical material is more likely to represent general background "noise" of plants that have been charred and deposited on-site

over time, rather than representing definite single deposition events of plants, such as the storage of crops or the accidental burning of a large unit of crops during processing or food preparation. It is assumed, however, that the presence of the crop species can be taken as evidence for the range of food crops that were available to the inhabitants of Middle Bronze Age Hirbemerdon Tepe. The wild taxa are likely to have entered the site with a harvested crop – most of the wild taxa in the archaeobotanical assemblage are common field crops – though the collection and burning of dung fuel on fireplaces and in ovens may also have been a source for some or all of the charred plant remains recovered.

The assemblage of crops is quite typical for the Middle Bronze Age in this region, judging from contemporary sites such as Tell Brak further south in northeast Syria (Charles and Bogaard 1997, Colledge 2003) and the settlements Hadidi along the Syrian Euphrates and Hammam et-Turkman on the Balikh River (van Zeist 1994). Unusual, however, appears to be the find of grapes, which has not been reported from this region in this quantity in the MBA, though single finds of grapes have been made. Zohary and Hopf (2000) note that grape becomes common during the Middle and Late Bronze Age across the Eastern Mediterranean. The Early Bronze Age archaeobotanical assemblage from Titris Höyük, which is currently being studied by Hald, appears from initial scanning to include a similar frequency of grape seeds.

The find of the whole grape in sample 6, stemming from a layer of fill above a floor, is particularly interesting (Fig. 21). From a fracture in the fruit, two seeds can be observed; they are a lot smaller than the other seeds in the assemblage, and may be either immature seeds or of a wild variety such as *Vitis sylvestris*, but a biometric study of the seeds to determine whether they are wild or domesticated is hampered by the fact that they are partially concealed by the fruit mesocarp. Another question is whether the whole grape should be considered the charred remains of a fresh grape, or a dried grape, i.e., a raisin. Margaritis and Jones (2006) have concluded, from experimental charring of grapes, that the distinction between charred fresh grapes and charred raisins is problematic (ibid. 2006: 800-801); the wrinkled surface of the Hirbemerdon fruit suggests that it could either have been a dry raisin charred in low temperatures, or a fresh grape. Finally, there is the question of whether the grape fruit remains may be connected to the pressing of grapes for wine, for which further studies of the Hirbemerdon Tepe material, as well as collection of more samples in future field seasons, are needed.

## A FIRST ASSESSMENT ON THE HIRBEMERDON TEPE FAUNAL REMAINS<sup>25</sup>

Remi Berthon

The study of the faunal remains from the site of Hirbemerdon Tepe started during the 2007 season.<sup>26</sup> In its initial phase, it was focused on the material from the Middle

<sup>25</sup> The Hirbemerdon faunal remains will be included in a broader PhD thesis undertaken at the Musée national d'histoire naturelle (Paris, France), under the direction of Dr. Marjan Mashkour. I thank Dr. Marjan Mashkour and Dr. Emmanuelle Vila for their comments on the manuscript and Krystyna Irvine who have turned my original writing expression into proper English.

Bronze Age levels excavated during the 2005 and 2006 seasons in the area A (High Mound). All the remains were washed, counted, weighed, and registered. A part of this sample was sent to Paris for further analysis.<sup>27</sup>

The studied sample was collected by hand and displays some fresh breaks<sup>28</sup> and various types of anthropic or natural marks. The studied assemblage is dated to the Middle Bronze Age (MBA), represented in several loci and from the phase related to the abandonment of the architectural complex (i.e., Late Bronze Age) which is represented only by one large locus (L. 287) and by an equid burial. In total, 970 fragments were processed but after having sorted out the reliable contexts, only 854 were kept for the present analysis, from which 529, or 62%, were identified to the rank of family, genus or species. Some remains were identified only as a skeletal part of a large (LM, like cattle, horse and red deer), middle (MM, like caprine, pigs or dog) or small (SM, like hare or felids) size mammals. Some others remained as unidentified parts of mammals.

### The species or taxa

The synthetic table (Table 2) shows the different families, genus and species encountered in the sample. The domestic mammals are represented first, followed by the wild species, each group according to the taxonomic list stated by Wilson and Reeder (1993). Antlers have not been included in the wild mammals counts, except for those fragments related directly to the skull, because they can also be raw material, as will be explained below. The Minimal Number of Individual (MNI) was calculated only for the most represented mammals and bones without looking at the age of the animal. Cervidae are not included in the MNI because they might concern selected bones extracted from the red deer individuals.

#### *Canidae*

The dog, wolf and jackal are difficult to distinguish without a large sample of measurable bones. Nonetheless, in Hirbemerdon Tepe those remains seem likely to fit with the dog and it was decided to allocate them to *Canis* cf. *familiaris*. Even if they do belong to the domestic dogs, there is no evidence, like the presence of cut marks, of any use of their meat. They represent a small part of the assemblage but the presence of dogs within the site is also attested by gnawing marks on a few bones.

<sup>26</sup> I would like to thank Dr. Nicola Laneri for inviting me to study the animal bones at Hirbemerdon Tepe. Mary Bagazinsky took part in the recording process while Dr. Jason Ur and Emily Hammer showed a great interest in searching for animal carcass for the comparative collection.

<sup>27</sup> I am indebted to Ms. Nevin Soyukaya, director of the Diyarbakır Museum, and the representative, Ms. Nilüfer Babacan for their interest in this research and to having me allowed to take the samples with me. Many thanks are due to the laboratory “Archéozoologie, Histoire des Sociétés humaines et des Peuplements animaux” (UMR 5197 CNRS / USM 303 MNHN, Paris) directed by Dr. Jean-Denis Vigne for their substantial financial help and the use of the comparative collection.

<sup>28</sup> In the case of several fragments from the same bone showing fresh breaks, they were counted as one rest.



### *Equidae*

The remains from the family of the horses, asses, hemiones and hybrids are very rare in the assemblage. There is no indication of the presence of wild equid such as hemione (*Equus hemionus*). Only one distal section of a tibia from the MBA levels has been assigned to an ass (*Equus asinus*) on the basis of morphological considerations (Uerpman 1986: 259). Two other equids come from particular deposits. One comes from loci 0016 and 0083 and seems to have been complete even if only some of the bones have been recovered and suffered from heavy weathering. Using the “ratio diagram” technique (Simpson 1941: 23-25) with the reference measurements published by V. Eisenmann (Eisenmann 1980; Eisenmann and Beckouche 1986; Dive and Eisenmann 1991), a first anterior phalanx, a metacarpus and an upper dental row allow us to determine this individual as a horse (*Equus caballus*). The other possibly complete equid seems to have been buried whole and is dated from the Late Bronze Age. Unfortunately, only the teeth are available for the analysis, while the rest of the skeleton stayed in the baulk. The upper teeth present mixed characters and it is not possible yet to determine with confidence this equid as a horse or a hybrid.

### *Suidae*

The swines are numerous in the sample. They are the most represented family in the two periods if we consider the MNI. It appears that both the domestic (*Sus domesticus*) and wild (*Sus scrofa*) forms were exploited at Hirbemerdon. The two species have been discriminated by using a log ratio with some selected measurements from modern wild boar from Turkey published by S. Payne and G. Bull (1988). This method allows the split of the measurements into two groups, even if our archaeological sample is still too small to clearly see the effect of sexual dimorphism. For example, the width of the third lower molar is problematic (Fig. 22). Only a few bones were assigned to the domestic or wild form with the log ratio. If they were not unusually large the other swine bones were grouped with the domestic pig.

Concerning the slaughtering age for the pigs, using together epiphyseal fusion date (Barone 1999: 76), dental eruption (compiled in Hillson 2005: 234) and dental wear stage (Grant 1982; Horard-Herbin 1997: 140), the pattern is roughly the same for the MBA and LBA levels. Almost half of the individuals slaughtered are younger or around one year old, a quarter of them between one and two and a half years old, and only a few individuals survived after the age of four years (none of them for the MBA).

Considering the number of remains and the slaughtering age, it is likely that domestic pigs have been an important source of meat. In relation to meat consumption, a talus and two scapula of pig show cut marks.

### *Cervidae*

The remains of deer are unexpectedly numerous. Both bones and antlers were recovered. As mentioned before, the antlers were considered as raw material and were not counted as part of the wild mammals actually hunted at the site, with the exception of three unshed antler where the parietal bone is still visible (Fig. 28). This decision is motivated by the discovery of evidence of at least three shed antler where the stump is

obviously not linked with any skull element (Fig. 29). Moreover, at least four antler fragments show a clear work mark (Fig. 27). The analysis of the antler remains is not over yet but all of them could be identified as red deer (*Cervus elaphus*). All the other bones, except few fragments kept as Cervidae, are assigned to the red deer. The measurements fall in the range of the Korucutepe red deer (Boessneck and Driesch von den 1975: 127-129) or are even slightly bigger. Further analysis will be undertaken in order to sort males and females. This information will allow us to check if the red deer hunting was focused only on males, those which wear the antlers.

We did not see any tangible evidence for the presence of any other deer species among the sample. Even if the Mesopotamian fallow deer (*Dama mesopotamica*) could in theory have lived in the area, it could not be identified here with certainty. This might have an effect of the small size of the studied sample. Also, there are no fallow deer remains published for the Halaf and Iron Age levels of Boztepe neither in the Ubaid assemblage of Kenan Tepe nor in any of the Korucutepe levels (for Korucutepe see Boessneck and Driesch von den 1975: 24 ; for Boztepe see Cavallo and Maliepaard 2002: 56 ; for Kenan Tepe see Parker et al. forthcoming: tab. 2). On the other hand, fallow deer, likely its “Mesopotamian” form, is noticed in other southeastern Anatolian sites such as Arslantepe (Bökönyi 1993: 343, 351), Lidar Höyük (Kussinger 1988: 11) or Hassek Höyük (Stahl 1989: 9). Fallow deer have also been published from the near site of Girnavez (Tekkaya 1994: 198) but the author refers only to a few antler fragments without any post-cranial element and assigns them to the “European” fallow deer (*Dama dama*).

### *Bovidae*

All the bones measured fall into the range of the domestic cattle (*Bos Taurus*) and are even rather small if compared with the Korucutepe remains (Boessneck and Driesch von den 1975: 45-58, 130-131). In general, the large red deer and the small cattle of our sample are of similar size, and are the reason why some fragmented bones could not been determined between those two genus.

When looking at the slaughtering age using epiphyseal fusion, dental eruption and molar crown height (Ducos 1968: 13), only one remain is younger than two years of age. Around three quarters of the remains are older than two to three years old and a third are older than four years old. This means than part of the cattle were slaughtered for their meat but a consequential number of them were kept until they were older, maybe in order to use them as draught-animal but no pathologies linked with these activities have been observed.

### *Caprinae*

The caprines include the goat (*Capra*) and the sheep (*Ovis*), each genus having a domestic (*Capra hircus* and *Ovis aries*) and a wild (*Capra aegagrus* and *Ovis orientalis*) species available in this region. Only 35% of the remains were assigned either to the goat or sheep. The measured bones determined to the genus have been compared with reference wild specimens published by H.-P. Uerpmann (1979). As our sample is too small to evaluate the impact of the sexual dimorphism, we registered the wild sheep remains as *Ovis cf. orientalis*.

The jaws and lower teeth are the most suitable to assess age and genus but we do not yet have enough remains to build kill-off patterns. However we can mention that in the MBA levels, over 60% of the remains are between four and ten years old using the wear stage (Payne 1973) and only one individual represents the younger stages between birth and 6 month old. Although we should keep in mind that the lack of young individuals could be a consequence of the hand picking, it cannot be the only reason of this obvious difference.

### *Testudines*

Fragments and more complete remains of carapace and plastron have been found. Further analysis will allow us to confirm the identification of the tortoise as *Testudo graeca*, already determined at Boztepe (Cavallo and Maliepaard 2002), Zeytinli Bahçe (Siracusano 2003), Korucutepe (Boessneck and Driesch von den 1975) and Arslantepe (Bökönyi 1983) or a freshwater turtle as *Mauremys caspica* present at Korucutepe<sup>29</sup> or *Emys orbicularis* recorded at Horum Höyük (Bartosiewicz 2005: 155).

### *Ichthyofauna*

Two large vertebra of a large Cyprinidae<sup>30</sup> are still to be determinate to the genus or species (Fig 25).

## **Preliminary conclusion**

First we must stress the strong similarities between the MBA and LBA assemblage levels (Tables 2-3). Even in this small sample we can notice that the animal exploitation patterns were similar when looking at the species representation<sup>31</sup>. If we take into consideration only the meat-providing animals (Fig. 23), only a slight difference can be seen in the number of remains of caprines but the result for the MNI is the same. If there is a real difference between the MBA and LBA assemblage it has to be searched among other data such as the slaughtering age or skeletal part representation. As it has been seen already, this sample is too small to look at differences in the slaughtering age. The data for skeletal part representation are still under treatment but no clear pattern seems to emerge.

In a general manner, compiling MBA and LBA levels, the animal economy was focused on domestic animals (Fig 24). Considering the amount of meat per individual, cattle were of much more importance in the food supply than it seems to appear in the Number of Remains or in the Minimal Number of Individuals. Pig and caprines had roughly the same importance but were probably not raised for the same goals. Pigs were a good meat supplier while sheep and goat could have been kept for secondary products as indicated by the relative importance of old individuals. Hunting played a more important

<sup>29</sup> J. Boessneck and A. von den Driesch mention *Clemmys capisca* which is now considered as a synonym of *Mauremys caspica* (see Gasc et al. 1997: 172).

<sup>30</sup> I thank Dr. Philippe Béarez for his help with those vertebrae.

<sup>31</sup> Looking at the meat provider animals, a Kendall's tau test gives 0.07 for the NR and 0.01 for the MNI.

role than expected in this region during the Bronze Age but the exact reason for this activity (for example, food supply, leisure, affirmation of a social status, cultural practice or search for raw material with male deer) will need to be clarified. The importance of the vicinity to the Tigris River is maybe underestimated by looking at the fish remains and shells found in the sample. Fish remains, if there are more of them, are to be searched for in the sieving refuses and an analysis should be undertaken to determine the species of mollusks and ascertain if they are suitable for consumption.

Compared with MBA and LBA levels from other sites in southeast Anatolia and the northern Mesopotamian steppe (Clason and Buitenhuis 1997 ; Zeder 1998 ; Clason and Buitenhuis 2000), the percentage of caprines in the domestic meat supplying mammals, in NR, is comparable with Hassek Höyük, around 40%, and lower than the other sites. On the other hand, no site shows such an important rate of wild mammals. Even in Habuba Kebira, Halawa and Munbaqa assemblages (all three compiled in Clason and Buitenhuis 1997), in which the proportion of wild mammals is above the range of the other sites, it does not exceed 10%.

Beside the food economy, the use of bone and antler as a raw material is well established. As a point of interest for the comprehension of the archaeological contexts, we noticed in the sample more bones and antlers showing manufacturing traces than actual finished tools. Also there are five fragments of antlers with such traces and only one bone, a proximal part of red deer metacarpus (Fig. 26). This focus on antler as a raw material could participate to the same trend as the one seen at MBA Arslantepe where almost 40% of the tools are made on antler, far more than in other levels (Choyke 2000: 176).

## PRELIMINARY REPORT ON THE SURVEY OF THE HIRBEMERDON TEPE REGION<sup>32</sup>

Jason Ur

The imminent completion of the İlisu Dam has brought intensive archaeological research to a region which has until recently been on the periphery of archaeological exploration in the Near East. The pace of excavation has not been matched by the study of settlement patterns and the broader landscape, with several notable exceptions. Guillermo Algaze's reconnaissance of the Batman-Bismil area (1989; Algaze et al. 1991)

<sup>32</sup> The Hirbemerdon Tepe Survey project gratefully acknowledges the support and encouragement of the Directorate General of Monuments and Museums of the Republic of Turkey, the staff of the Diyarbakır Museum (especially Nevin Sokuyaka), and Nicola Laneri and Mark Schwartz. Our representatives Nilüfer Babacan and Rana offered excellent advice and were critical to the success of the survey field season. In 2007, the core field team consisted of Jason Ur and Emily Hammer (Harvard University); Umut Parlüt (Adana University); and Guido Guarducci (University of Florence). We were also assisted in the field by Nilüfer Babacan (Head of the İlisu Dam Project); Dr. Mark Schwartz, Nate Hansen, and Mary Bagazinski (Grand Valley State University); Rémi Berthon (CNRS); and Nilüfer Akdağ (Dicle University). We must thank Stefano Valentini and Anacleto D'Agostino for valuable advice on ceramic chronology, and Francesca Gulli for linguistic advice and invaluable logistical support. The 5m contour interval topographic data was generously supplied by Devin White, and we thank Guillermo Algaze for allowing us the use of his Batman-Bismil survey maps. The map figures in this report were created by Emily Hammer.

established the positions and scale of the major mounded settlements and has now been followed up by further surveys of major mounds (Ay 2001) and Paleolithic remains (Taşkıran and Kartal 2004).

### **The Hirbemerdon Tepe region**

Hirbemerdon Tepe sits atop a high terrace overlooking the Tigris just below its confluence with the Batman Çay. Its immediate hinterland shows remarkable diversity, compared to the rest of the sites in the Batman-Bismil area of the future İlisu Dam reservoir (Fig. 30). Most of the other sites under excavation are found on the Tigris' lower terraces, with the floodplain in front of them and broad cultivable terraces around and behind them (Kuzucuoğlu 2002; Doğan 2005). This stretch of Tigris with series of terraces ends at Hirbemerdon, where the Tigris cuts a narrow valley through high cliffs. To the north lay the Ramandağ mountains, and the uplands to the south are eroded and uneven, and lack the large areas of deep soils which characterize the upstream terraces.

The hinterland of Hirbemerdon Tepe straddles this interface between broad and cultivable river terraces and rugged uplands more suited for grazing (Fig. 31). To the northwest, the low river terraces are heavily cultivated, often with both winter and summer crops, and cultivation extends onto the higher terraces to the south with the aid of pumped Tigris water. To the southeast of Hirbemerdon, however, only a few agricultural fields are to be found in limited areas of gentle slopes and deeper soils; the long-term pattern has been, and appears to still be, one of sheep and goat pastoralism.

### **Survey goals and methods**

This liminal position presents methodological challenges but even more opportunities for a program of archaeological landscape survey. In addition to placing Hirbemerdon Tepe into its landscape context, this geographically diverse region preserves the remains of sedentary agriculturalist and non-sedentary pastoralist communities. Nomadic pastoralism in the Near East has been under-investigated by archaeologists, despite its well-known economic and political importance over the millennia (Cribb 1991; Abdi 2003; Salzman 2004). In the Upper Tigris region over the last millennium, pastoral nomads have been particularly significant and even politically dominant, as in the case of the Aqquyunlu confederation (Woods 1999). Surveys in Mesopotamia have been overwhelmingly focused on alluvial areas where recent agriculture has wiped clean the ephemeral traces of pastoral nomads (Wilkinson 2000). With its combination of river floodplains, terraces, and uplands, the Hirbemerdon region seemed likely to preserve their archaeological remains.

The limited area of the survey (5 km radius on the Tigris' right bank, a total of 48 km<sup>2</sup>) offers the possibility of employing new intensive methods. In addition to the mounded sites, the survey intended to recover non-mounded sites, sites badly damaged by recent agriculture, campsites of non-sedentary pastoralists, and symbolic landscapes of burials. Standard Near Eastern mound surveys under-represented these types of sites and landscapes (Wilkinson et al. 2004).

The survey's methods were specifically designed to complement the results of Algaze's reconnaissance. We adopted a stratified approach which combined intensive transect walking with opportunistic observations. For the former, transects were ordered at 25 m intervals. Field walkers marked surface artifacts with flags, which were then positioned via a mobile GIS-enabled handheld computer. This component of the survey was thus "siteless" in that it mapped not sites but the artifacts which comprise them (Dunnell and Dancey 1983); only retroactively were site boundaries defined by an assessment of artifact density. Such assessments require surface visibility to be approximately constant across all surfaces, so transects were limited to fallow or heavily grazed agricultural land. Elsewhere, we employed more traditional targeted or opportunistic methods of site identification as employed in adjacent alluvial areas of northern Mesopotamia (e.g., Wilkinson and Tucker 1995; Ur 2002).

### **Preliminary results of the 2007 season**

In our intensive program, we walked 316 transects covering 47.7 km, and plotted 6,251 sherds and 334 lithics. Our program identified 29 sites, three of which had previously been identified by Algaze (Sites 1, 4, and 29, equivalent to Algaze 71/72, 25, and 84, respectively). In addition to Hirbemerdon, only one mounded site was identified (Site 4, Kavuşak Tepe). That both of these sites had already been identified by Algaze demonstrates the effectiveness of traditional Near Eastern methods for recovering mounded sites.

The hidden landscape revealed by intensive fieldwalking can be well demonstrated in the area immediately around Hirbemerdon, where we recovered a number of substantial artifact scatters which probably correspond to settlements of short duration, low population density, or both (Fig. 32). Site 2 is a dense scatter of lithics and handmade coarse-tempered sherds, probably Neolithic in date; Sites 19 and 22 are both Medieval Islamic. The high concentration of sherds in the field northeast of Hirbemerdon should probably be considered as an outer suburb on the opposite side of the wadi, since datable material was limited to the Middle Bronze and Iron Ages. None of these sites had any visible mounding, and none exhibited any of the soil discoloration that permits sites to be identified using CORONA and Ikonos satellite imagery; indeed, none could have been identified without field transect walking. The intensively-investigated 600 m radius around Hirbemerdon illustrates the density of settlement remains that might be overlooked when relying exclusively on more extensive methods. In the uplands to the south, transects identified a scatter of Hellenistic sherds near Tepekonak which covered at least 10 ha.

In alluvial contexts, surveys must contend with the possibility that sites have been removed by river movement or rendered entirely invisible on the surface by the aggradation of sediments. One site was found through opportunistic section observation, and may be indicative of considerable alluviation close to the floodplain. Site 3 (Fig. 33) was revealed by erosion caused by irrigation water cascading off of the edge of the lowest terrace. Section scraping showed mud brick walls, lines of ash, and abundant potsherds including known Late Chalcolithic 1 types such as sprig ware (Ball 1997), at a depth of 1.5 m below the surface. Other settlements positioned very close to the Tigris may have



been covered with alluvial deposits during particularly high floods and are now invisible even to intensive field transect walking.

In addition to habitation sites, the survey recovered abundant evidence for lithic extraction and manufacturing activities. Almost every local promontory or hill in the survey region was littered with large flint nodules, cores, manufacturing debris, and occasionally the lithic tools themselves. Other lithic scatters occur in almost all fields at a low density. Transects at the Tigris terrace edges crossed patches of dense river cobbles, several of which contained symmetrical handaxes with very abraded and worn edges, clearly of great antiquity. However, it is unclear as to whether these were found near where they were used or if they had been redeposited in these cobble outcrops through the actions of water.

The survey was especially interested in identifying the activities of pastoral nomads. Traces of their activities are unlikely to survive on the alluvial plains that have been disproportionately favored by survey projects, and their presumed archaeological invisibility has discouraged targeted field research. One of the most exciting aspects of the survey was the possibility of finding pastoral landscapes, especially in the uncultivated uplands of the southeastern area. We targeted several areas for non-transect-based intensive observation. The standing architecture at Site 18 rendered it clearly visible in Ikonos satellite imagery as well as on the ground (Figs. 34). The site consisted of 16 rectangular stone-walled structures which stood to approximately one meter, most with a single door facing the wadi. By measuring the negligible wall collapse, it was clear that the walls had never stood any higher, and thus these were probably footings atop which tents of the multi-poled type would have been erected (Cribb 1991). Unfortunately artifact scatters were light and surface visibility low due to thick vegetation, but the site is probably to be dated to the 20th century. Perhaps more typical is Site 26, another campsite 400 m down the wadi; its similarly sized structures were badly robbed out and none were preserved higher than about 0.25 m. Elsewhere in the southeastern area, the survey found circles of stones which probably represent the former positions of small campsites of the Central Asian framed type (Andrews 1997: 5-7). These latter campsites are far less visible and may be underrepresented without an intensive method. These upland campsites were positioned near wadis, but we also recovered evidence for upland water conservation in the form of a rock-cut cistern (Site 24).

Far more easily identified were pastoral cemeteries in the form of extensive cairn fields. Although variable, cairns were about 2 m in diameter and 0.5 m in height, constructed of natural stones with variable quantities of lichen, which could be used to identify recent disturbance (Fig. 35). Cairns occur individually, but more often in small clusters, and in two instances, in vast fields. For example, 172 cairns were mapped at Site 16, but we estimate that this represents less than half of the preserved features (Fig. 36). At present we assume that these stone piles mark burials of pastoral nomads who used this area as a *kıslak* (winter grazing ground). The cairn field is subdivided by low linear arrangements of stones which may have marked boundaries within it. Without any associated artifactual material, it is not possible to date these features. The majority of cairns at Site 16 were heavily lichen-coated, but whether this signifies a century, a millennium, or more is impossible to say at present. The Batman-Bismil region is

historically known to have hosted pastoral nomadic groups in the last millennium, most notably the great Aqquyunlu tribal confederacy (Woods 1999). Further assessment will require excavation.

### **Concluding remarks on the 2007 survey season**

The sampling and ground control acquisition approach adopted by the 2007 HMTS does not allow us to describe synchronic patterns of settlement at this stage. A number of rather complex landscapes can be described (for example, the Hellenistic complex at Tepekonak, and the cairn field at Site 16), but it is not yet possible to articulate settlement systems. The landscape features (campsites, cairns, cisterns, etc.) which are so well preserved in the Hirbemerdon region are frustratingly difficult to date.

We can, however, make some general comments on important issues in Near Eastern survey. Most significantly, we can begin to describe a hidden landscape of settlements, campsites and landscape features that are unlikely to be recovered by traditional Near Eastern reconnaissance survey. With the exception of the two mounds at Hirbemerdon and Kavuşak, the habitation sites can only be identified via shifts in the density of surface artifacts. It is important to focus on relative density, because the Hirbemerdon landscape is littered with surface artifacts. Only 44 of the 316 transects contained no artifacts whatsoever. The scatter density is much lower than on the alluvial plains of northern Syria and Iraq (Wilkinson 1982; Ur 2002), but it does hint at off-site human activities which are poorly understood at present.

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## POTTERY CATALOGUE (FIGS. 9-15) – ‘ARCHITECTURAL COMPLEX’ ALLEY 47 (L. 225)

N	W	Color (out)	Color (in)	Color (section)	ST	Fa	Dec
001	RBWW	dark reddish grey - 2.5YR 3/1	dark reddish grey - 2.5YR 3/1	pale red - 2.5YR 7/2	1	1	3
002	RBWW	red - 10R 4/6	red - 10R 4/6	grey - 10R 5/1	1	1	1
003	RBWW	weak red - 2.5YR 4/2, reddish brown - 4/3	weak red - 2.5YR 4/2	weak red - 2.5YR 5/2	1	1	1
004	RBWW	light reddish brown - 2.5YR 6/3	light reddish brown - 2.5YR 6/3	grey - GLEY1 6/1	1	1	1
005	RBWW	yellowish red - 5YR 5/6, light reddish brown - 5YR 6/4	red - 2.5 YR 5/6	grey - GLEY1 5/N	1b	1	2
006	RBWW	weak red - 10R 4/4, red - 4/6	red - 2.5YR 6/6	pale red - 2.5YR 7/2	1	1	1
007	RBWW	weak red - 10R 5/4	weak red - 10R 5/4	red - 10R 5/6	1	1	1
008	RBWW	light reddish brown - 2.5YR 6/4, dark reddish brown - 2.5YR 3/3	reddish brown - 2.5YR 5/3	black - GLEY1 2.5/N	1	1	1
009	RBWW	weak red - 10R 4/4, black - GLEY1 2.5/N	weak red - 10R 4/4	dark grey - GLEY1 4/N	1	2	1
011	RBWW	red - 10R 4/6	red - 10R 4/6	light reddish brown - 5YR 6/4	1	1	2
012	RBWW	N/A	N/A	N/A	N/A	N/A	N/A
013	RBWW	red - 10R 4/6	red - 10R 4/6	light reddish brown - 2.5YR 6/3	1	1	2
014	RBWW	red - 10R 4/6, reddish black - 2.5YR 2.5/1, light red - 10R 7/8	light reddish brown 2.5YR 6/3	dark reddish grey - 10R 4/1	1	1	1
015	RBWW	red - 2.5YR 5/6	red - 2.5YR 5/6	pale red - 10R 6/4	1	1	1
016	RBWW	red - 10R 4/6	red - 10R 4/6	light reddish brown - 2.5YR 6/3	1	1	2
017	RBWW	weak red - 10R 4/4, red - 4/6	weak red - 10R 5/3	black - GLEY1 2.5/N	1	2	1
018	RBWW	dark reddish brown - 2.5YR 3/3	dark reddish brown - 2.5YR 3/3	dark grey - GLEY1 4/1	1	1	1+inc
019	RBWW	red - 2.5YR 5/6	red - 2.5YR 5/6	very dark grey - GLEY1 3/N	1	1	1
020	RBWW	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	dark grey - GLEY1 4/N	1	1	1
021	RBWW	very dark grey - 7.5YR 3/1	reddish brown - 2.5YR 5/4	dark grey - GLEY1 4/N	1	2	1
022	RBWW	light reddish brown - 2.5YR 6/4	light reddish brown - 2.5YR 6/4	dark grey - GLEY1 4/N	1	2	1
023	RBWW	red - 10R 5/8, weak red - 10R 5/8	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	1	1	1
024	RBWW	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	grey - 7.5YR 5/1	1	1	1
025	RBWW	dark reddish brown - 2.5YR 3/3	dark reddish brown - 2.5YR 3/3	light red - 2.5YR 6/6	1	1	1
026	RBWW	red - 2.5YR 5/6	red - 2.5YR 5/6	light reddish brown - 2.5YR 6/3	1	1	1
027	RBWW	reddish brown - 2.5YR 5/3, dark reddish grey - 2.5YR 4/1	reddish brown - 2.5YR 5/3, dark reddish grey - 2.5YR 4/1	very dark grey - GLEY1 3/N	1	2	1
028	RBWW	red - 10R 5/6	red - 10R 5/6	black - GLEY1 2.5/N	1	1	1
029	RBWW	dark reddish grey - 2.5YR 3/1, red - 2.5YR 5/6	dark reddish grey - 2.5YR 3/1, red - 2.5YR 5/6, red - 2.5YR 4/8	reddish grey - 2.5YR 5/1	1	2	1
030	RBWW	N/A	N/A	N/A	N/A	N/A	N/A
031	RBWW	dark reddish brown - 2.5YR 3/3	reddish brown - 5YR 4/3	reddish brown - 2.5YR 5/3	1	1	3
032	RBWW	red - 2.5YR 4/6	red - 2.5YR 4/6	reddish grey - 2.5YR 5/1	1	1	1
033	RBWW	red - 10R 4/6	red - 10R 4/6	reddish grey - 2.5YR 6/1	1	1	2

N	W	Color (out)	Color (in)	Color (section)	ST	Fa	Dec
034	RBWW	reddish brown - 5YR 5/4	reddish brown - 5YR 5/4	reddish grey - 2.5YR 5/1	1	2	3
035	RBWW	red - 10R 5/8	red - 10R 5/8	very dark grey - GLEY1 3/N	1	1	1
036	RBWW	red - 10R 4/6	red - 10R 4/6	light red - 10R 7/6	1	1	2
037	RBWW	reddish brown - 2.5YR 4/4, red - 4/6	reddish brown - 2.5YR 4/4	black - GLEY1 2.5/N	1	1	1
038	RBWW	light reddish brown - 2.5YR 6/4	light reddish brown - 2.5YR 6/4	reddish grey - 2.5YR 5/1	1	1	1
039	RBWW	light red - 2.5YR 7/6	light red - 2.5YR 7/6	grey - 5YR grey	1	1	1
040	RBWW	red - 10R 4/6	red - 10R 4/6	light reddish brown - 2.5YR 6/4	1	1	1
041	PKW	reddish brown - 2.5YR 4/4	light reddish brown - 5YR 6/3	light reddish brown - 5YR 6/3	2	1	Paint
042	RBWW	red - 2.5YR 5/6	red - 2.5YR 5/6	light reddish brown - 2.5YR 6/4	1	1	1+inc
043	RBWW	light reddish brown - 2.5YR 6/4, light red - 6/6	weak red - 2.5YR 5/2, dark reddish grey - 4/1	very dark grey - GLEY1 3/N	1	1	1+inc
044	RBWW	yellowish red - 5YR 5/6	red - 10R 5/6, reddish grey 10R 5/1	reddish grey - 5YR 5/1	1b	1	1+inc
045	GW	dark reddish grey - 2.5YR 4/1	weak red - 2.5YR 4/2, 4/1	dark grey - GLEY1 4/N	4	1	
046	RBWW	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	reddish yellow - 5YR 6/6	1	1	1+inc
047	RBWW	very dark grey - 5YR 3/1	very dark grey - 5YR 3/1	light reddish brown - 5YR 6/4	1	1	3
048	RBWW	N/A	N/A	N/A	N/A	N/A	N/A
049	RBWW	dark reddish grey - 2.5YR 3/N	dark reddish grey - 2.5YR 3/N	reddish grey - 2.5YR 5/1	1	2	1+inc
050	RBWW	reddish brown - 5YR 4/3	reddish yellow - 5YR 6/6	grey - GLEY1 5/N	1	1	1+inc
051	RBWW	red - 2.5YR 4/6, dark reddish brown 2.5YR 3/4	red - 2.5YR 4/6	light red - 2.5YR 6/8	1	2	3+inc
052	RBWW	dark grey - 10R 3/6	light red - 2.5YR 7/6	light reddish brown - 2.5YR 7/4	1	1	1
053	RBWW	red - 10R 4/6	pink - 7.5YR 7/3	pale red - 10R 6/4	1	1	2
054	RBWW	N/A	N/A	N/A	N/A	N/A	inc
055	RBWW	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	grey - 2.5YR 5/1	4	2	1
056	RBWW	red - 2.5YR 4/8	red - 2.5YR 4/8	light red - 2.5YR 6/6	1	1	1
057	RBWW	reddish brown - 5YR 5/3	reddish brown - 5YR 5/3	very dark grey - GLEY1 3/N	1	1	1
058	RBWW	dark red - 2.5YR 3/6, dark reddish grey - 2.5YR 3/1	dark red - 2.5YR 3/6	light red - 2.5YR 6/6	1	1	2
059	RBWW	red - 2.5YR 4/8	red - 2.5YR 4/8	light reddish brown - 2.5YR 7/4	1	1	1
060	RBWW	reddish brown - 5YR 5/3	red - 10R 5/6	reddish grey - 2.5YR 5/1	1	1	3+inc
061	RBWW	reddish brown - 5YR 5/3, dark reddish grey - 5YR 4/2	brown - 7.5YR 5/4	very dark grey - GLEY1 3/N	1	1	1+inc
062	RBWW	red - 2.5YR 5/6, dark reddish brown - 2.5YR 3/4	light reddish brown - 2.5YR 6/4	reddish grey - 2.5YR 5/1	1	1	1+inc
063	RBWW	reddish brown - 2.5YR 5/4	yellowish red - 5YR 5/6	dark grey - 5YR 4/1	1	1	1+inc
064	RBWW	red - 2.5YR 5/6	light reddish brown - 5YR 6/4	reddish grey - 2.5YR 5/1	1	1	1+inc
065	RBWW	reddish black - 2.5YR 2.5/1	reddish yellow - 5YR 7/8	dark grey - GLEY1 4/N	1	2	1+inc

N	W	Color (out)	Color (in)	Color (section)	ST	Fa	Dec
066	RBWW	dark reddish brown - 5YR 3/2	dark reddish brown - 5YR 3/2	reddish yellow - 5YR 7/6	1	1	3
067	RBWW	red - 2.5YR 4/8, reddish brown 2.5YR 4/4	red - 2.5YR 4/8, reddish brown	very dark grey - GLEY1 3/N	1	1	3
068	RBWW	red - 2.5YR 4/6	light grey - 10YR 7/2	grey - 10YR 6/1	1	1	1+inc
069	RBWW	dark reddish brown - 5YR 3/2	light red - 10R 6/8	dark grey - GLEY1 4/N	1	2	1
070	RBWW	red - 10R 4/6	light red - 2.5YR 6/8	reddish grey - 2.5YR 5/1	1	1	1+inc
071	RBWW	red - 2.5YR 4/6	yellowish red - 5YR 5/6	yellowish red - 5YR 5/6	1	2	2+inc
072	RBWW	red - 10R 5/6	red - 10R 5/6	dark grey - GLEY1 4/N	1	1	1
073	CC	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	dark grey - 5YR 4/1	4	1	
074	CC	dark grey - 5YR 4/1	black 5YR 2.5/1	reddish brown - 5YR 4/3	4	5	
075	RBWW	light reddish brown - 2.5YR 7/4	light reddish brown - 2.5YR 7/4	black - GLEY1 2.5/N	2	4	
076	CC	light grey - 10R 7/2	light brownish grey - 10R 6/2	light red - 2.5YR 7/8	2	5	
077	CC	light brown - 7.5YR 6/4	light brown - 7.5YR 6/4	dark grey- 7.5YR 4/1	2	5	
078	CC	light brown - 7.5YR 6/4	light brown - 7.5YR 6/4	dark grey- 7.5YR 4/1	1c	2	
079	CC	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	weak red - 10R 5/2	6	1	
080	CC	light reddish brown - 2.5YR 6/4	red - 10R 5/8	dark grey - GLEY1 4/N	6	2	
082	CC	light reddish brown - 2.5YR 6/3	light reddish brown - 2.5YR 6/3	dark reddish grey -2.5YR 4/1		2	
083	CC	red - 10R 5/6	red - 10R 5/6	red - 10R 5/6	4	1	
084	CC	reddish yellow - 5YR 7/6	light red - 2.5YR 6/6	reddish yellow - 2.5YR 6/8	6	2	
085	CC	pink - 7.5YR 7/4	pink - 7.5YR 7/4	grey - 7.5YR 5/1	2	3	
086	CC	light red - 2.5 6/6	reddish brown - 2.5 5/3	black - GLEY1 2.5/N	6	5	
087	CC	red - 2.5YR 5/8	red - 2.5YR 5/8	very dark grey - GLEY1 3/N	3	1	
088	CC	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	dark grey - GLEY1 4/N	4	5	
089	CC	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	reddish yellow - 5YR 6/6	4	1	
090	CC	reddish brown - 2.5YR 5/4	weak read - 10R 5/4	very dark grey - GLEY1 3/N	2	1	
091	CC	reddish brown - 2.5YR 4/4	reddish brown - 2.5YR 4/4	red - 2.5YR 4/6	3	1	
092	CC	light red - 2.5YR 6/6	light red - 2.5YR 7/6	reddish brown - 2.5YR 5/4		1	
093	CC	weak red - 10R 5/4	reddish black - 10R 5/4	black - GLEY1 2.5/N	2	4	
094	CC	reddish yellow - 5YR 6/6	reddish yellow - 5YR 6/6	very dark grey - GLEY1 3/N	4	2	
095	CC	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	grey - GLEY1 5/N	4	5	
096	CC	reddish brown - 2.5YR 5/4	light reddish brown - 2.5YR 6/4	very dark grey - GLEY1 3/N	4	1	
097	CC	light brown - 7.5YR 6/3	brown - 7.5YR 5/3	very dark grey - GLEY1 3/N	4	1	
098	RBWW	reddish brown - 5YR 5/4	reddish brown - 5YR 5/4	dark grey - GLEY1 4/N	2	1	1
099	CC	red - 2.5YR 6/6	red - 2.5YR 6/6	very dark grey - GLEY1 3/N	3	1	
100	CC	light red - 2.5YR 7/6	light reddish brown - 2.5YR 6/4	dark grey - GLEY1 4/N	2	5	
101	CC	light brown - 7.5YR 6/3	red - 2.5YR 5/6	black - GLEY1 2.5/N	2	1	
102	CC	red - 2.5YR 6/6	red - 2.5YR 6/6	dark grey - GLEY1 4/N	4	1	
103	CC	light red - 10R 6/6	light red - 10R 6/6	reddish grey - 10R 5/1	2	2	

N	W	Color (out)	Color (in)	Color (section)	ST	Fa	Dec
104	CC	pale red - 10R 6/4	pale red - 10R 6/4	black - GLEY1 2.5/N	3	1	
105	CC	reddish brown - 2.5YR 4/4	red - 10R 5/6	very dark grey - GLEY1 3/N	6	2	
106	RBWW	pinkish grey - 5YR 6/2	pinkish grey - 5YR 6/2	grey - GLEY1 5/N	2	2	
107	CC	light red - 2.5YR 6/6	light reddish brown - 2.5YR 6/4	reddish grey - 2.5YR 5/1	4	2	
108	CC	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	red - 2.5YR 4/6	2	3	
109	CC	reddish brown - 2.5YR 5/3	reddish brown - 2.5YR 5/3	reddish brown - 2.5YR 5/3	6	1	
110	CC	reddish brown - 2.5YR 4/4	reddish brown - 2.5YR 5/3	black - GLEY1 2.5/N	1	1	
111	RBWW	brown - 7.5YR 5/2	brown - 7.5YR 5/2	dark grey - 7.5YR 4/1	2	1	1
112	CC	N/A	N/A	N/A	N/A	N/A	N/A
113	CC	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	dark grey - 5YR 4/1	3	1	
114	CC	reddish brown - 5YR 5/4	reddish brown - 5YR 5/4	black - 7.5YR 2.5/1	6	1	
115	CC	dark reddish brown - 2.5YR 3/4	dusky red - 2.5YR 3/2	black - GLEY1 2.5/N	4	2	
116	RBWW	red - 10R 5/6	light red - 2.5YR 7/6	reddish grey - 2.5YR 6/1	1	2	1
117	RBWW	red - 2.5YR 6/8, dusky red - 2.5YR 3/2	light reddish brown - 2.5YR 6/4	reddish grey 2.5YR 6/1	1	1	2
118	RBWW	weak red - 10R 4/4, pink - 5YR 7/4	weak red - 10R 4/4, pink - 5YR 7/4	pink - 2.5YR 8/4	1	1	2
119	PKW	bande reddish brown - 2.5YR 5/4 + reddish brown - 5YR 5/3	reddish brown - 5YR 5/3	reddish brown - 5YR 5/3	2	1	Paint
120	RBWW	reddish brown - 5YR 5/4	reddish brown - 5YR 5/4	grey - GLEY1 5/N	1	1	3
121	RBWW	reddish brown - 2.5YR 5/3	light red - 2.5YR 6/6	light red - 2.5YR 6/6	1	2	1
122	RBWW	weak red - 10R 5/4	weak red - 10R 5/4	reddish grey - 10R 5/1	1	1	1
123	RBWW	N/A	N/A	N/A	N/A	N/A	N/A
124	RBWW	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	light reddish brown - 2.5YR 6/4	1	1	1
125	RBWW	reddish brown - 5YR 4/4	reddish brown - 5YR 4/4	grey - 5YR 6/1	1	1	1
126	RBWW	red - 10R5/6	reddish brown - 5YR 4/4	reddish yellow - 5YR 7/6	1	1	1
127	RBWW	red - 10R 4/6	light red - 2.5YR 6/8	light reddish brown - 2.5YR 6/4	1	1	1
128	RBWW	dark reddish grey - 2.5YR 3/1	reddish yellow - 5YR 6/6	reddish yellow - 5YR 6/8	1	2	3
129	RBWW	dark red - 2.5YR 3/6	light red - 2.5YR 6/6	light red - 2.5YR 6/6	1	1	1
130	RBWW	reddish brown - 2.5YR 4/3	reddish brown - 2.5YR 4/3	dark reddish grey - 2.5YR 4/1	1	1	1
131	RBWW	reddish brown - 2.5YR 5/4, red - 2.5YR 4/8	reddish brown - 2.5YR 5/4	reddish grey - 2.5YR 5/1	1	2	1
132	RBWW	reddish brown - 2.5YR 5/4	dark grey - GLEY1 4/N	dark reddish grey - 2.5YR 3/1	1	2	1
133	RBWW	dark reddish brown - 5YR 3/2	dark reddish brown - 5YR 3/2	reddish grey - 2.5YR 5/1	1	2	1
134	PKW	light reddish brown - 2.5YR 6/4	light red - 2.5YR 7/6	light red - 2.5YR 7/6	1	2	1
135	PKW?	N/A	N/A	N/A	N/A	N/A	N/A
136	PKW	reddish brown - 5YR 5/4, dark reddish brown	reddish brown - 5YR 5/4	light red - 2.5YR 7/6	1b	1	Paint
137	PKW	very dark grey - 2.5YR 3/1	yellowish brown - 2.5Y 6/4	yellowish brown - 2.5Y 6/4	1	2	Paint
138	PKW	dark reddish brown - 2.5YR 4/6, 3/4 + reddish yellow - 5YR 7/6	dark reddish brown - 2.5YR 4/6, 3/4	light red - 2.5YR 6/8	1	1	Paint
139	PKW	red - 2.5YR 4/6	red - 2.5YR 4/6	black - GLEY1 2.5/N	1	2	Paint

N	W	Color (out)	Color (in)	Color (section)	ST	Fa	Dec
140	PKW	red - 2.5YR 4/8, dark reddish brown - 2.5YR 3/4	dark reddish brown - 2.5YR 3/4	dark grey - GLEY1 4/N	1	2	Paint
141	PKW	red - 10R 5/6	red - 10R 5/6	very dark grey - GLEY1 3/N	1	1	Paint
142	PKW	dark red - 2.5YR 4/8	dark red - 2.5YR 4/8	reddish brown - 2.5YR 5/4	1	1	Paint
143	PKW	red - 10R 5/6	red - 10R 5/6	light reddish brown - 5YR 6/3	1	1	Paint
144	PKW	strong brown - 7.5YR 5/6	strong brown - 7.5YR 5/6	very dark grey - GLEY1 3/N	1	1	Paint
145	PKW?	N/A	N/A	N/A	N/A	N/A	N/A
146	RBWW	reddish brown - 2.5YR 5/4	reddish brown - 2.5YR 5/4	light reddish brown - 2.5YR 6/4	1	2	1
147	RBWW	red - 2.5YR 4/6, dark reddish brown - 2.5YR 3/4	red - 2.5YR 4/6	reddish grey - 2.5YR 5/1	1	1	3
148	RBWW	weak red - 10R 4/3, dark reddish brown - 2.5YR 3/3	weak red - 10R 4/3	very dark grey - GLEY1 3/N	1	2	1+inc
149	RBWW	red - 2.5 5/6	light red - 2.5YR 6/6	grey - GLEY1 6/N	1	2	1
150	RBWW	red - 10R 5/6	red - 10R 6/6	dark grey - GLEY1 4/N	1	1	1
151	RBWW	red - 10R 5/6, light reddish brown - 2.5YR 6/4	pink - 5YR 7/3	dark grey - 5YR 4/1	1	2	1+inc
152	RBWW	red - 2.5 5/6	light red - 2.5YR 6/6	grey - GLEY1 6/N	1	2	1+inc
153	RBWW	red - 10R 5/6, light reddish brown - 2.5YR 6/4	pink - 5YR 7/3	dark grey - 5YR 4/1	1	1	1
154	RBWW	dark reddish grey - 2.5YR 3/1, reddish brown - 2.5YR 4/4	light red - 2.5YR 6/6	light red - 2.5YR 6/6	1	1	3
155	RBWW	dark reddish brown - 2.5YR 3/3	pink red - 2.5YR	light red - 2.5YR	1	2	3
156	RBWW	yellowish red - 5YR 5/6	Pink - 5YR 7/6	grey - 5YR 5/1	1	2	1+inc
157	RBWW	red - 2.5YR 4/6	light red - 2.5YR 7/8	light red - 2.5YR 7/8	1	1	1
158	RBWW	red - 10R 5/6	light reddish brown - 2.5YR 6/4	grey - 5YR 5/1	1	2	1
159	RBWW	N/A	N/A	N/A	N/A	N/A	N/A
160	RBWW	N/A	N/A	N/A	N/A	N/A	N/A
161	GW	dark grey - GLEY1 4/N, dark greenish grey - 4/1	grey - GLEY1 6/N	grey - GLEY1 5/N	5	1	1+app
162	RBWW	black - GLEY1 2.5/N	dark reddish brown - 5YR 2.5/2	black - GLEY1 2.5/N	1	2	1+app
163	PKW	red - 2.5YR 4/8 + light red - 2.5YR 6/6	light red - 2.5YR 6/6	light red - 2.5YR 6/6	3	1	1
164	C	grey - 5YR 5/1	light reddish brown - 5YR 6/3	dark grey - GLEY1 4/N	1	1	
165	C	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	very dark grey - GLEY1 3/N	3	2	
166	C	reddish brown - 2.5YR 5/4	light red - 2.5YR 6/6	dark grey - GLEY1 4/N	2b	2	
167	C	light reddish brown - 2.5YR 6/3	light red - 5YR 5/6	grey - 5YR 5/1	2b	2	inc
168	C	light reddish brown - 5YR 6/4	light reddish brown - 5YR 6/4	dark grey - GLEY1 4/N	3	2	
169	C	reddish grey - 5YR 5/2	light red - 2.5YR 6/8	light red - 2.5YR 6/8	1	2	
170	CC	very pale brown - 10YR 7/3	very pale brown - 10YR 7/3	very dark grey - GLEY1 3/N		2	
171	CC	N/A	N/A	N/A	N/A	N/A	N/A
172	RBWW	dark red 2.5YR 3/6	pink - 5YR 7/6	grey - 5YR 5/1	1	1	1
173	RBWW	black - GLEY1 2.5/N	reddish yellow - 5YR 6/6	light reddish brown - 2.5YR 7/4	1	2	1+inc
174	RBWW	red - 2.5YR 5/6	light grey - 2.5YR 6/8	grey - 2.5YR 5/1	1	1	1

Sample number	2	3	4	5	6	8	9	10	11	13	15	19	28	31	35	36	42	45
Volume (litres) processed	20	5	6	8	9	4	1,6	30	11	3	12	1,4	3	12	8	9	4	2
Total no. of items in sample	9	2	1	3	39	3	40	11	11	0	0	1	2	8	4	35	2	5
Density (items/litre)	0,45	0,4	0,17	0,38	4,33	0,75	25	0,37	1	0	0	0,71	0,67	0,67	0,5	3,89	0,5	2,5
Context (ROOM)	42	43	19	20	27	31	47	22	26	24	18	45	3	1a	8	7	6,7	11
<b>Cereal grains</b>																		
<i>Hordeum sativum</i> , hulled				1	2		4									1		
<i>Hordeum</i> sp.					1													
<i>Triticum dicoccum</i>					2		2											
Glume wheat indet				1	1		1							1				
Cf. glume wheat												1						
Cf. free-threshing wheat							1											
<i>Triticum</i> indet							1											
<i>Avena</i> sp.																	1	
Cereal grain indet			1		5		6	3	1								1	
<b>Cereal chaff</b>																		
<i>Triticum dicoccum</i>														1				2
<i>Triticum</i> cf. <i>dicoccum</i>	2						3		3				1					2
<i>Triticum</i> cf. <i>monococcum</i>								2										
<i>T. dicoccum/monococcum</i>						2												
Glume wheat indet							1		3					1				
Top of culm	2																	
<b>Pulses</b>																		
<i>Lens culinaris</i>					2												2	
<i>Vicia ervilia</i>														1				
Large legume indet.					1			1			1							
<b>Other crops</b>																		
<i>Vitis vinifera</i> seed				1	17		5	1										
<i>Vitis vinifera</i> fruit					1		1											
Possible hazelnut?					1													
<b>Wild taxa</b>																		
<i>Gypsophila</i> sp.															1			
<i>Agrostemma</i> sp./ <i>Gypsophila</i> sp.	1																	
<i>Silene</i> sp.							1								1			
<i>Vaccaria</i> sp.					1													1
<i>Carex</i> sp.								1										
Graminae	2				2		3	3	2	1	1		1	2	1		9	
<i>Lamium</i> sp.																	1	
<i>Trifolium</i> sp.							1											
<i>Trigonella</i> sp.							3		1								1	
Leguminosae	2													1			4	1
<i>Papaver</i> sp.																		1
<i>Rumex</i> sp.					1												6	
cf. <i>Adonis</i> sp.																		
<i>Galium</i> sp.						1			1								2	
<i>Verbascum</i> sp.														1				
<i>Valerianella</i> sp.															1			
Valerianaceae							1											
Wild indeterminate seeds	2				2		6							3			7	

Table 1. List of charred plant remains observed in Middle Bronze Age levels at Hirbemerdon Tepe.



Species		NR	%NR	WR	%WR	MNI	%MNI
<i>Canis cf. familiaris</i>	Dog	12	1.41	69	0.38	3	5.45
<i>Equus caballus</i>	Horse	40	4.68	3671	20.11	2	3.64
<i>Equus asinus</i>	Ass	1	0.12	38	0.21	1	1.82
<i>Equus spp.</i>	Horse, ass, mule or hinny	3	0.35	473	2.59	2	3.64
<i>Sus domesticus</i>	Pig	121	14.17	2033	11.13	20	36.36
<i>Bos taurus</i>	Cattle	56	6.56	2948	16.14	5	9.09
Caprinae	Sheep or goat	95	11.12	998	5.47	0	0.00
<i>Capra hircus</i>	Goat	21	2.46	464	2.54	7	12.73
<i>Ovis aries</i>	Sheep	31	3.63	251	1.37	5	9.09
<b>Total domestic mammals</b>		<b>380</b>	<b>44.50</b>	<b>10946</b>	<b>59.94</b>	<b>45</b>	<b>81.82</b>
<i>Sus scrofa</i>	Wild boar	18	2.11	613	3.36	3	5.45
Cervidae*	Red deer or fallow deer	4	0.47	267	1.46		
<i>Cervus elaphus</i> *	Red deer	76	8.90	2102	11.51	6	10.91
<i>Ovis cf. orientalis</i>	Wild sheep	2	0.23	30	0.16	1	1.82
<b>Total wild mammals</b>		<b>100</b>	<b>11.71</b>	<b>3012</b>	<b>16.49</b>	<b>10</b>	<b>18.18</b>
Testudines	Turtle or tortoise	5	0.59	64	0.35		
Ichtyofauna	Fish	2	0.23	16	0.09		
Malacofauna	Shell	14	1.64	67	0.36		
<b>Total others</b>		<b>21</b>	<b>2.46</b>	<b>146</b>	<b>0.80</b>		
Bos/Cervus	Cattle or red deer	10	1.17	274	1.50		
LM		75	8.78	1116	6.11		
MM		106	12.41	446	2.44		
SM		5	0.59	3	0.02		
Indetermined mammals		139	16.28	682	3.73		
<b>Total indetermined</b>		<b>335</b>	<b>39.23</b>	<b>2521</b>	<b>13.80</b>		
Cervids antler		18	2.11	1638	8.97		
<b>TOTAL</b>		<b>854</b>		<b>18260</b>		<b>55</b>	

\* without antlers

Table 2. Faunal spectra of Hirbemerdon. (NR) Number of Remains, (WR) Weight (g), (MNI) Minimal number of Individuals.

Species	NR	%NR	WR	%WR	MNI	%MNI
<i>Canis cf. familiaris</i>	9	1.34	58	0.43	2	5.71
<i>Equus caballus</i>	40	5.95	3671	27.63	2	5.71
<i>Equus asinus</i>	1	0.15	38	0.29	1	2.86
<i>Equus spp.</i>	2	0.30	23	0.17	1	2.86
<i>Sus domesticus</i>	87	12.95	1488	11.20	12	34.29
<i>Bos taurus</i>	39	5.80	1840	13.84	3	8.57
Caprinae	44	6.55	464	3.49	0	0.00
<i>Capra hircus</i>	16	2.38	379	2.85	5	14.29
<i>Ovis aries</i>	20	2.98	135	1.02	2	5.71
<b>Total domestic mammals</b>	<b>258</b>	<b>38.39</b>	<b>8096</b>	<b>60.92</b>	<b>28</b>	<b>80.00</b>
<i>Sus scrofa</i>	11	1.64	323	2.43	2	5.71
Cervidae*	2	0.30	79	0.59		
<i>Cervus elaphus</i> *	59	8.78	1581	11.90	4	11.43
<i>Ovis cf. orientalis</i>	1	0.15	12	0.09	1	2.86
<b>Total wild mammals</b>	<b>73</b>	<b>10.86</b>	<b>1994</b>	<b>15.00</b>	<b>7</b>	<b>20.00</b>
Testudines	4	0.60	29	0.22		
Ichtyofauna	1	0.15	9	0.06		
Malacofauna	12	1.79	50	0.38		
<b>Total others</b>	<b>17</b>	<b>2.53</b>	<b>88</b>	<b>0.66</b>		
Bos/Cervus	9	1.34	233	1.75		
LM	66	9.82	960	7.23		
MM	97	14.43	423	3.18		
SM	5	0.74	3	0.02		
Indeterminate mammals	136	20.24	664	4.99		
<b>Total indeterminate</b>	<b>313</b>	<b>46.58</b>	<b>2284</b>	<b>17.19</b>		
Cervidae antlers	11	1.64	828	6.23		
<b>TOTAL</b>	<b>672</b>		<b>13290</b>		<b>35</b>	

\* without antlers

Table 3. Distribution of the faunal remains in the MBA levels using the Number of Remains (NR), the Weight (g) (WR) and the Minimal Number of Individuals (MNI).

Species	NR	%NR	WR	%WR	MNI	%MNI
<i>Canis cf. familiaris</i>	3	1.65	12	0.23	1	4.76
<i>Equus spp.</i>	1	0.55	450	9.05	1	4.76
<i>Sus domesticus</i>	34	18.68	544	10.95	8	38.10
<i>Bos taurus</i>	17	9.34	1108	22.29	2	9.52
Caprinae	51	28.02	534	10.75	0	0.00
<i>Capra hircus</i>	5	2.75	85	1.71	2	9.52
<i>Ovis aries</i>	11	6.04	115	2.31	3	14.29
<b>Total domestic mammals</b>	<b>122</b>	<b>67.03</b>	<b>2848</b>	<b>57.30</b>	<b>17</b>	<b>80.95</b>
<i>Sus scrofa</i>	7	3.85	291	5.85	1	4.76
Cervidae*	2	1.10	189	3.80		
<i>Cervus elaphus</i> *	17	9.34	520	10.46	2	9.52
<i>Ovis cf. orientalis</i>	1	0.55	17	0.34	1	4.76
<b>Total wild mammals</b>	<b>27</b>	<b>14.84</b>	<b>1017</b>	<b>20.46</b>	<b>4</b>	<b>19.05</b>
Testudines	1	0.55	35	0.69		
Ichtyofauna	1	0.55	7	0.14		
Malacofauna	2	1.10	16	0.32		
<b>Total others</b>	<b>4</b>	<b>2.20</b>	<b>58</b>	<b>1.17</b>		
Bos/Cervus	1	0.55	40	0.81		
LM	9	4.95	156	3.14		
MM	9	4.95	23	0.46		
Indeterminate mammals	3	1.65	18	0.36		
<b>Total indeterminate</b>	<b>22</b>	<b>12.09</b>	<b>237</b>	<b>4.77</b>		
Cervidae antlers	7	3.85	810	16.30		
<b>TOTAL</b>	<b>182</b>		<b>4970</b>		<b>21</b>	

\* without antlers

Table 4. Distribution of the faunal remains in the LBA levels using the Number of Remains (NR), the Weight (g) (WR) and the Minimal Number of Individuals (MNI).

## HIRBEMERDON TEPE 2007

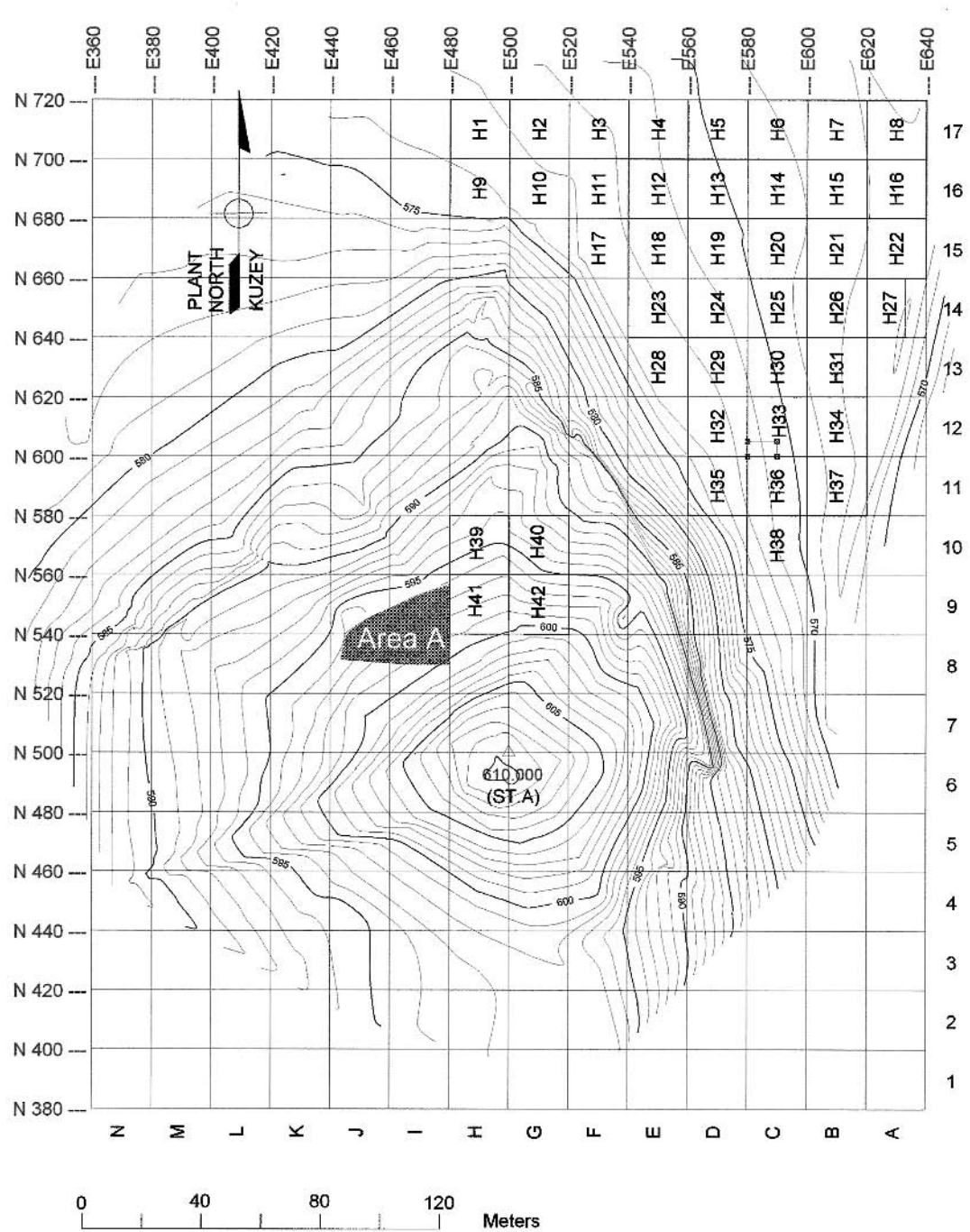


Fig. 1. Topographical map of Hirbemerdon Tepe

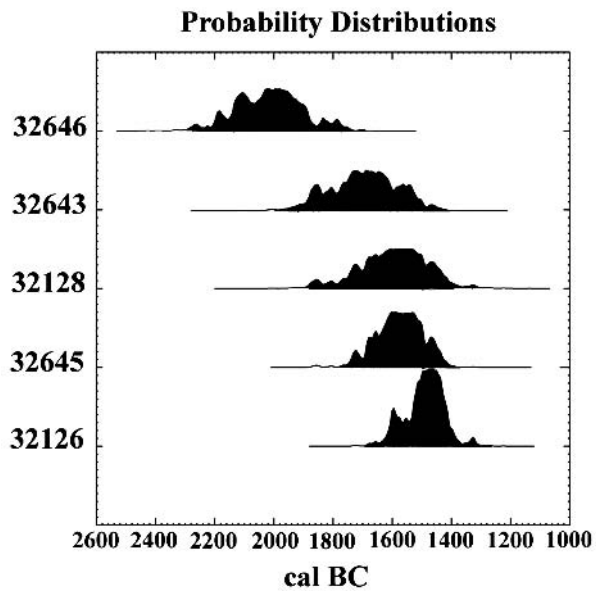


Fig. 2. Five calibrated dates from the ‘architectural complex’ that were processed by the Geochron laboratory in Cambridge Massachusetts using conventional (non-AMS) dating techniques (i.e., the raw dates were calibrated using the CALIB 5.0.1 calibration program).



Fig. 3. Iron Age cist grave of an infant (L. 490) in the High Mound (Area A) viewed from north.

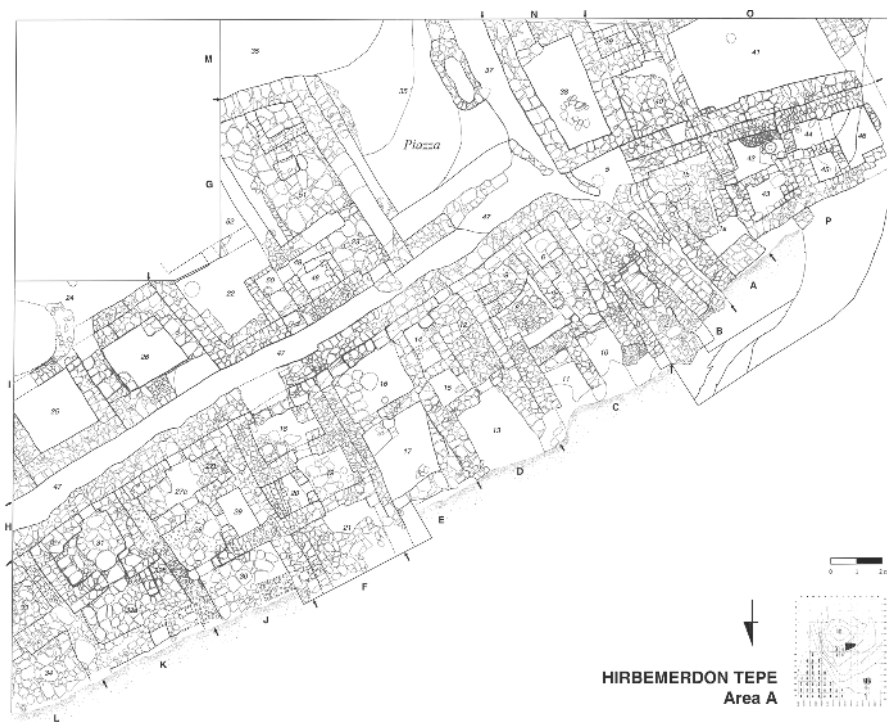


Fig. 4. Architectural complex of the Middle Bronze Age located in the High Mound (Area A).



Fig. 5. Room 51 of the 'architectural complex' viewed from north.





Fig. 6. A decorated votive plaque found in the piazza of the MBA 'architectural complex.'



Fig. 7. A broken animal figurine found in the piazza of the MBA 'architectural complex.'



Fig. 8. Fine ware cup of the RBWW assemblage part of the foundation deposit in Room 51.

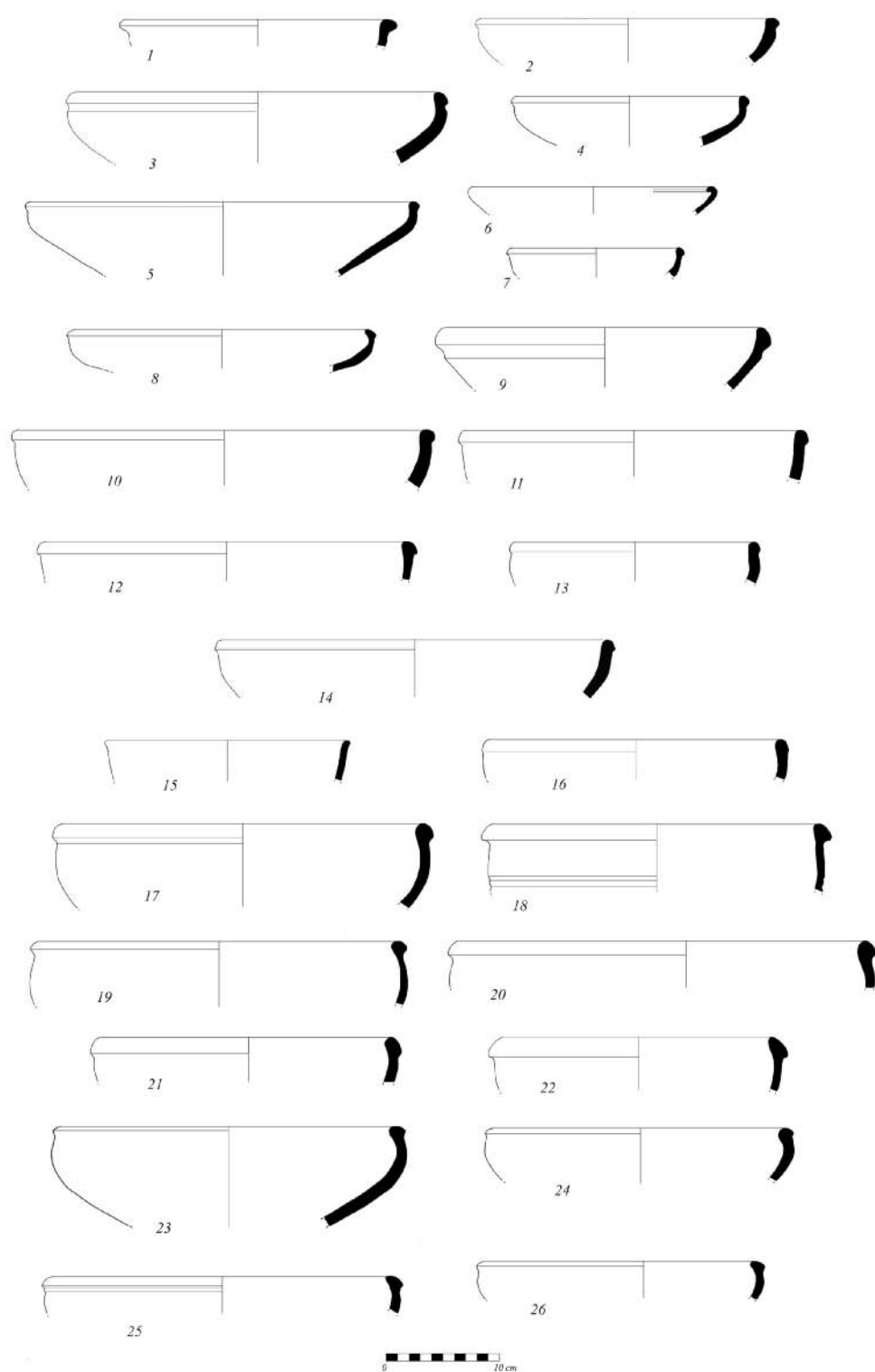


Fig. 9. Drawings of pottery from alley 47 (L. 225): Red Brown Wash Ware.

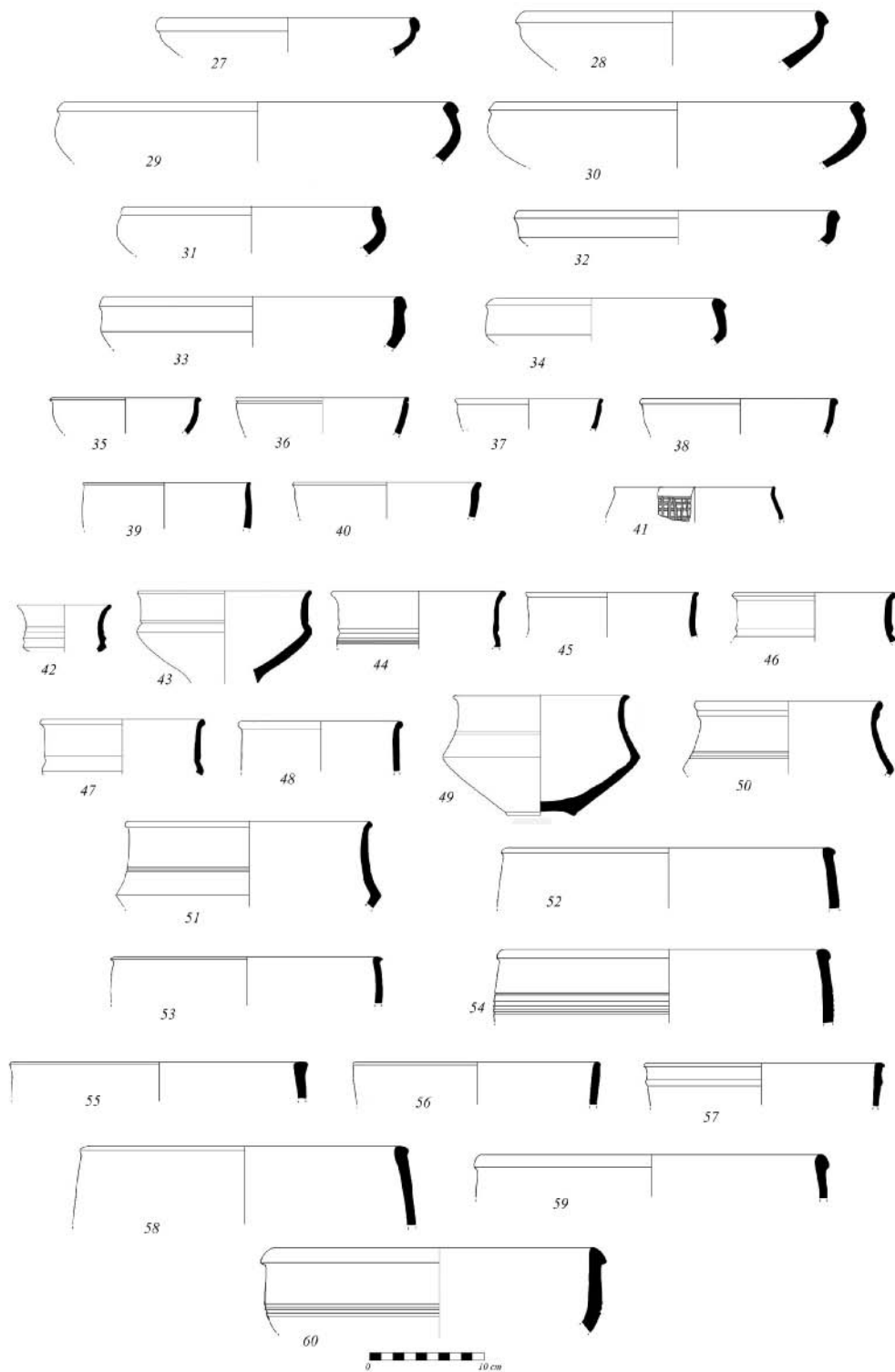


Fig. 10. Drawings of pottery from alley 47 (L. 225):  
 Red Brown Wash Ware (n. 27-40, 42-44, 46-60), Gray Ware (n. 45), Painted Ware (n. 41).

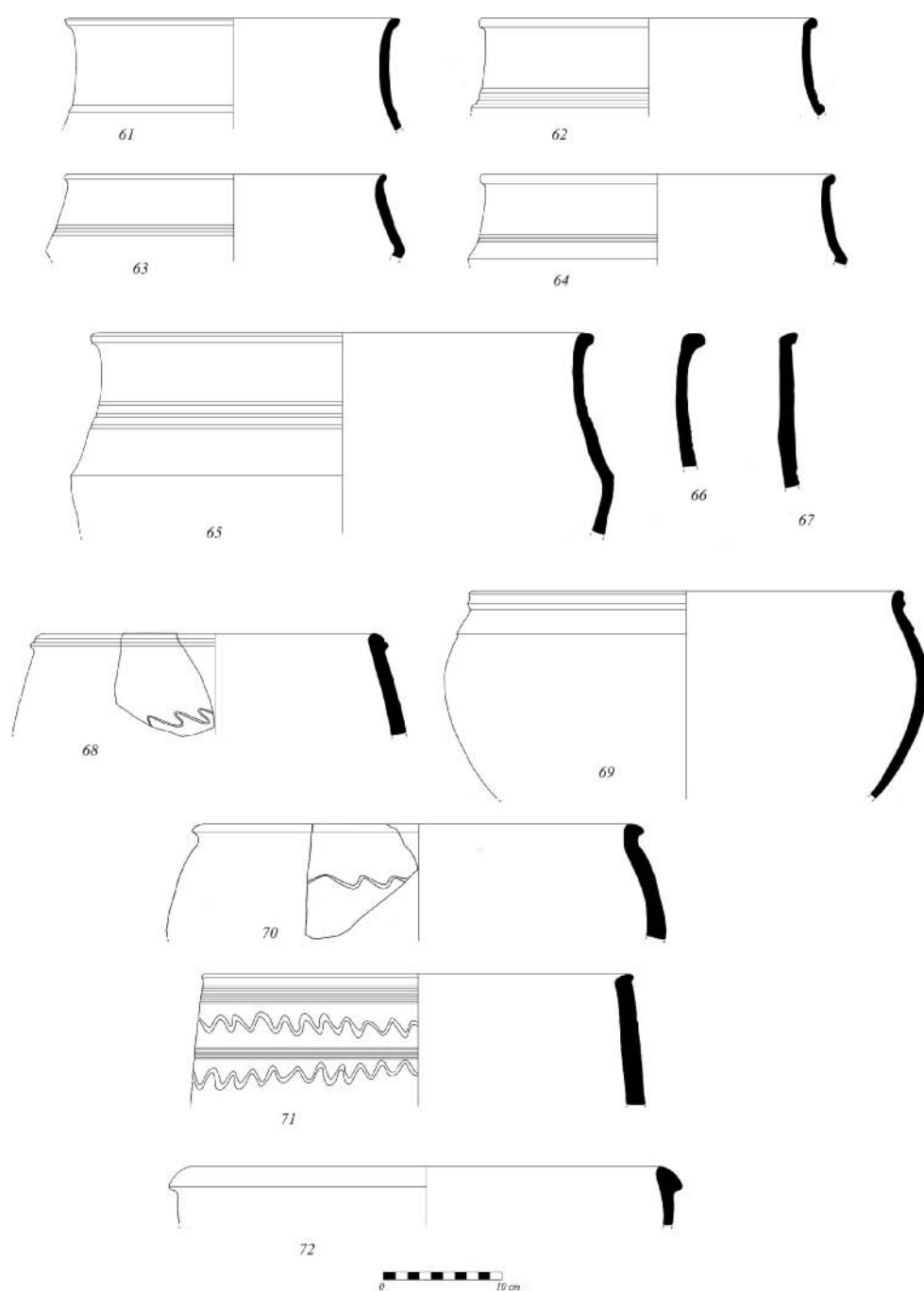


Fig. 11. Drawings of pottery from alley 47 (L. 225): Red Brown Wash Ware.

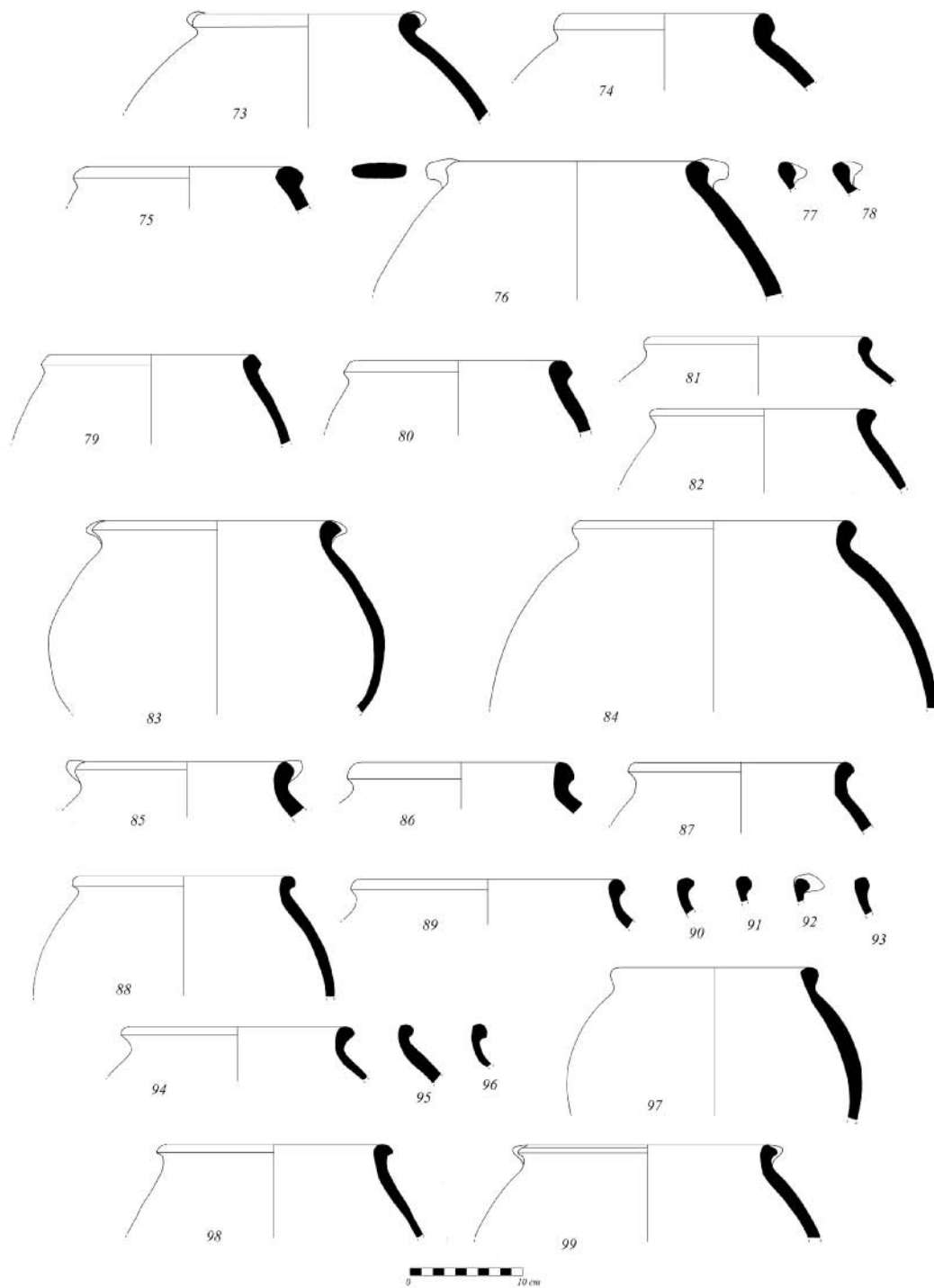


Fig. 12. Drawings of pottery from alley 47 (L. 225): Cooking Ware (n. 73, 74, 76-97, 99) and Red Brown Wash Ware (n. 75, 98).

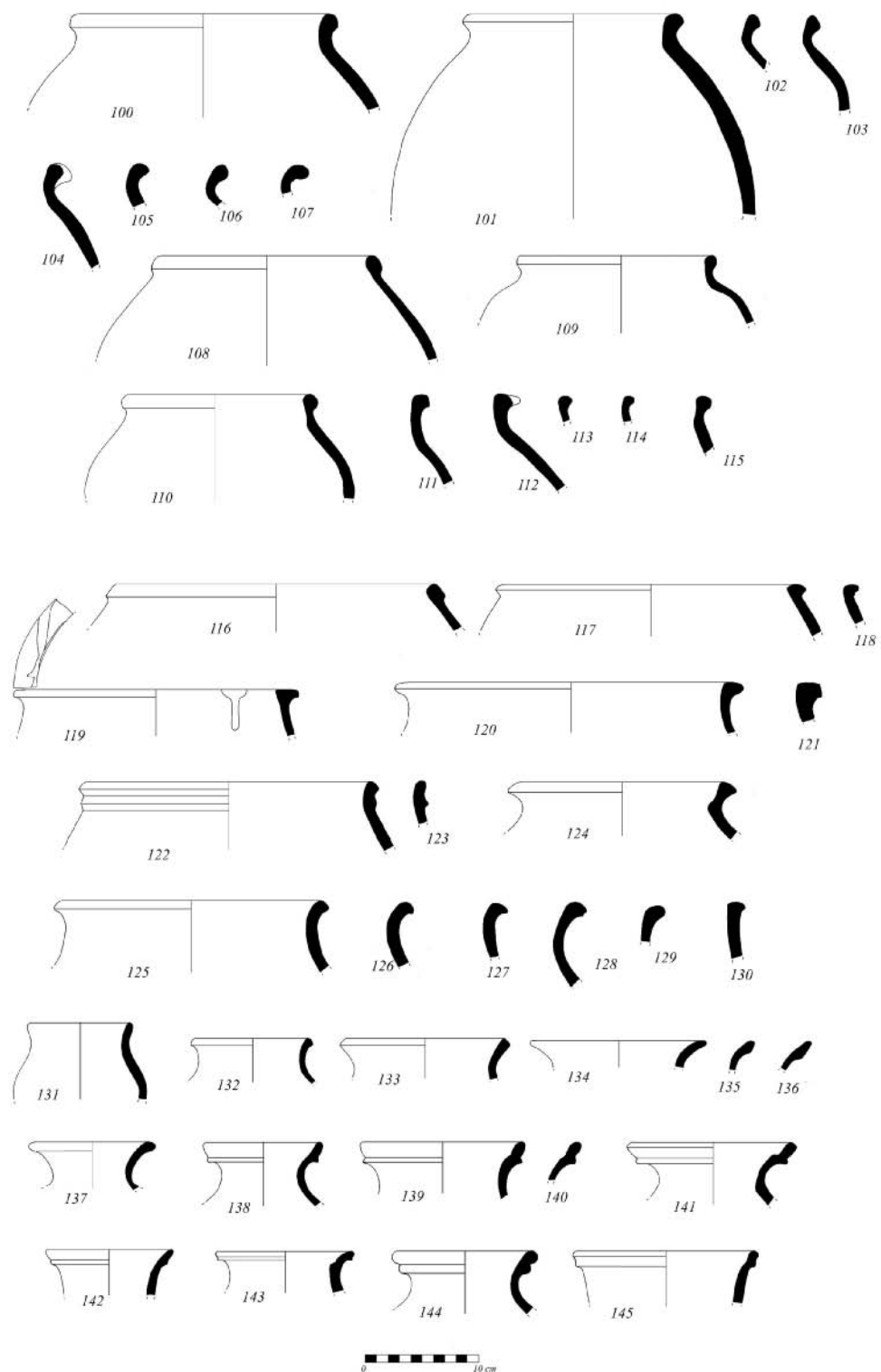


Fig. 13. Drawings of pottery from alley 47 (L. 225): Cooking Ware (n. 100-105, 107-110, 112-115), Red Brown Wash Ware (n. 106, 111, 116-118) and 'Pseudo-Khabur' Ware (n. 119-145).



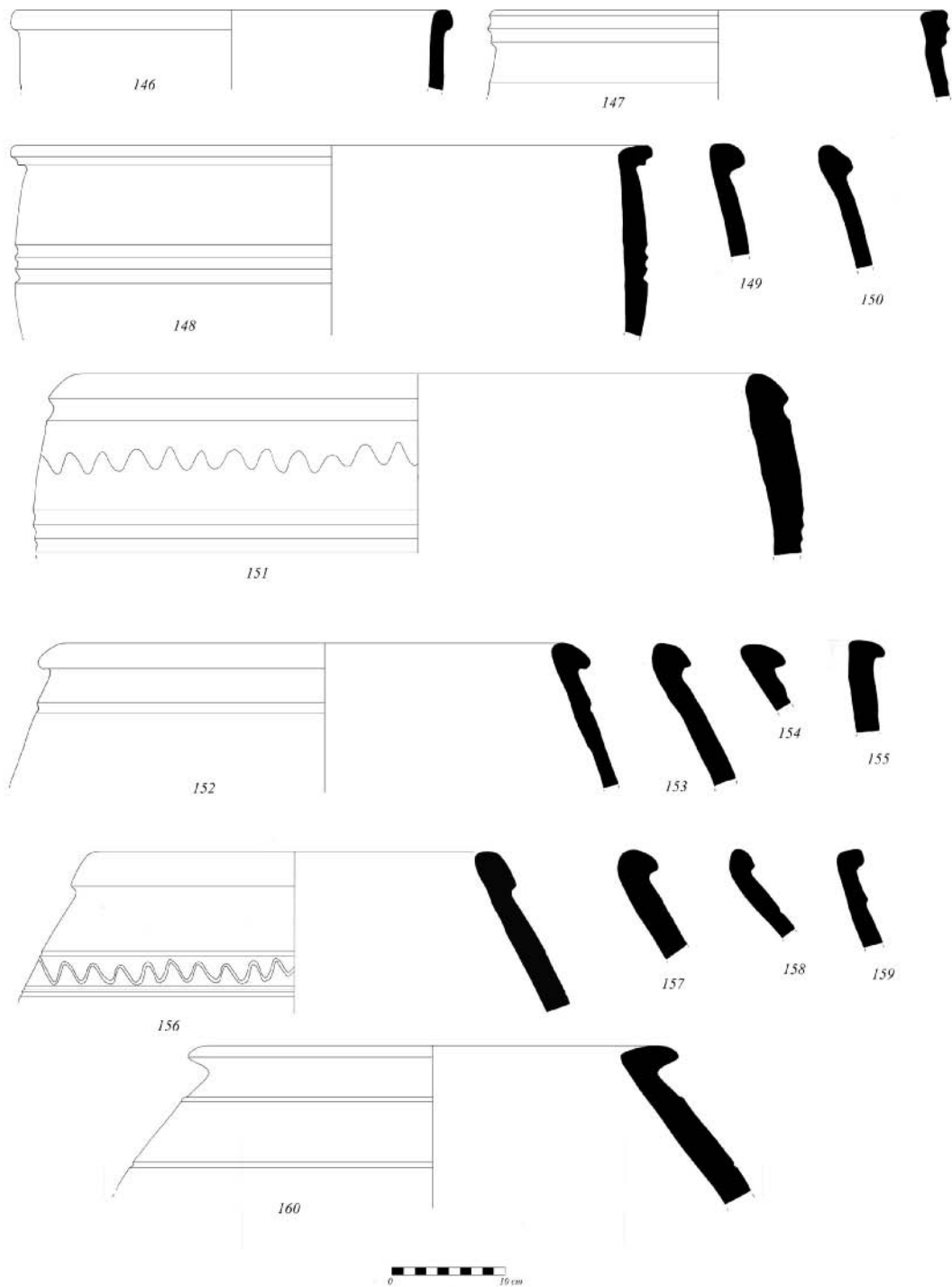


Fig. 14. Drawings of pottery from alley 47 (L. 225): Red Brown Wash Ware.

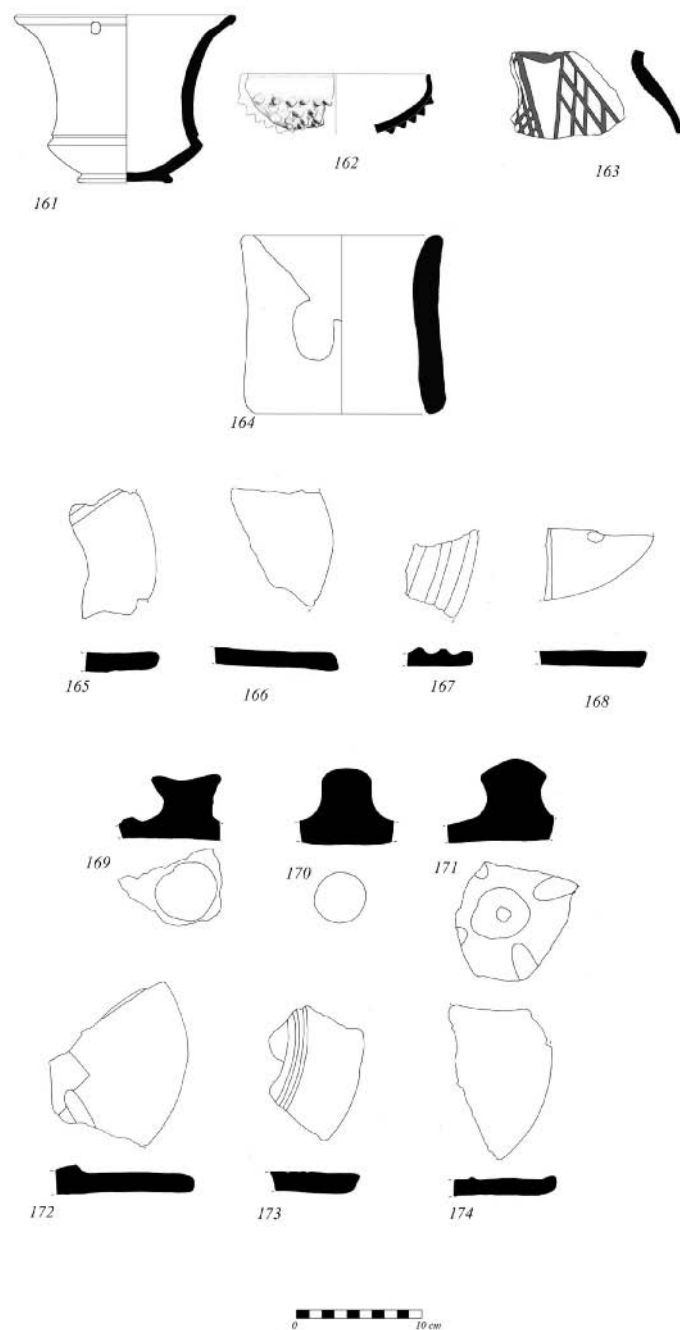


Fig. 15. Drawings of pottery from alley 47 (L. 225): Gray Ware (n. 161), Red Brown Wash Ware (n. 162, 172-174), 'Pseudo-Khabur' Ware (n. 163), Common Ware (n. 164-171).

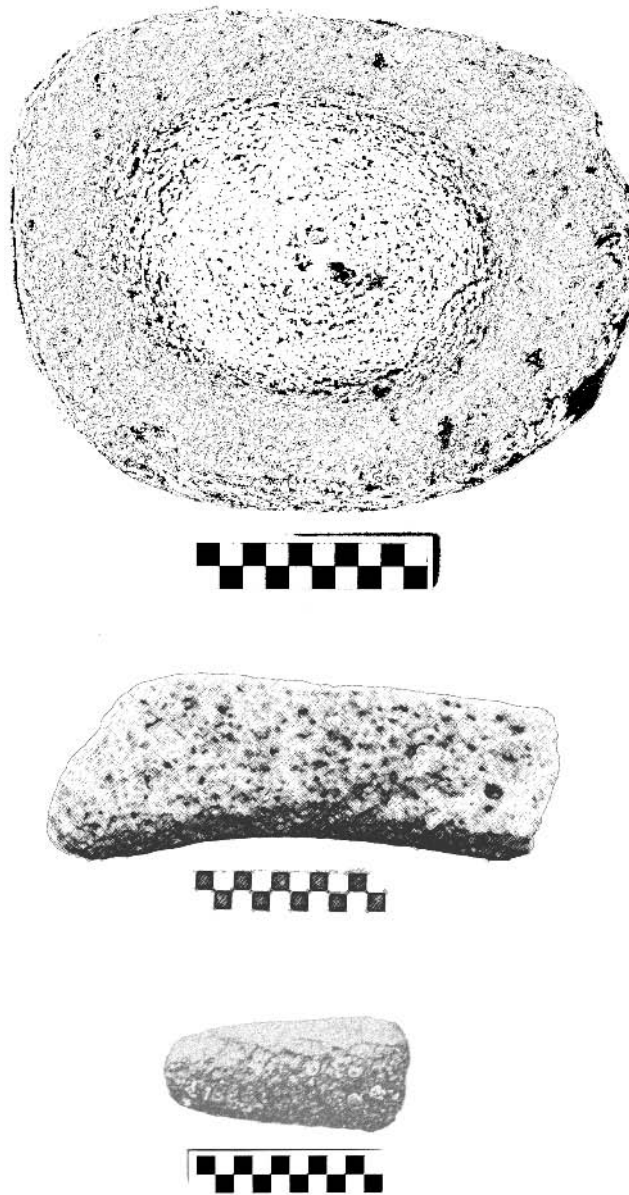


Fig. 16. Grinding Stones from Hirbemerdon Tepe. From top to bottom, a limestone mortar, basalt grinding slab, and basalt pestle.

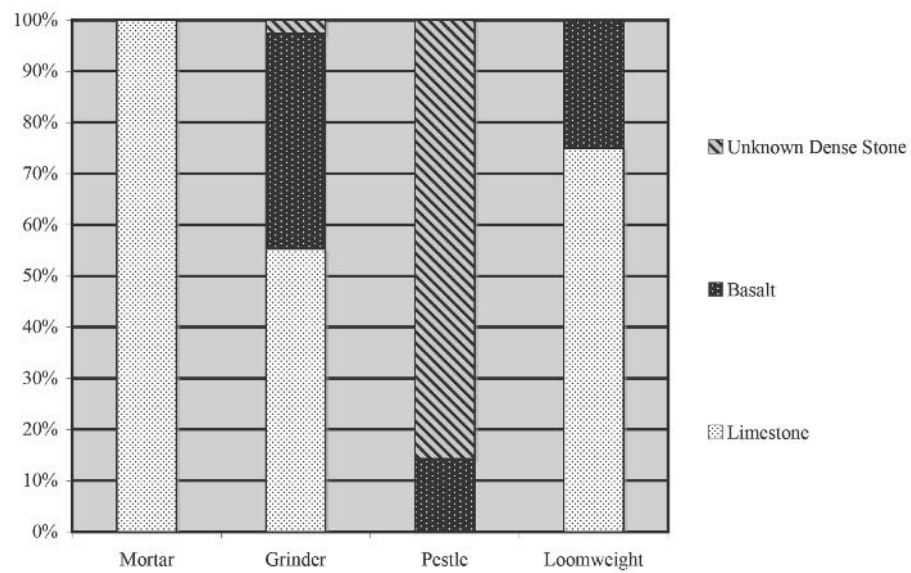


Fig. 17. Graph showing percentages of different lithic materials used for specific tool types.



Fig. 18. Two limestone mortars and a basalt grinding slab found *in situ* in the architectural complex.

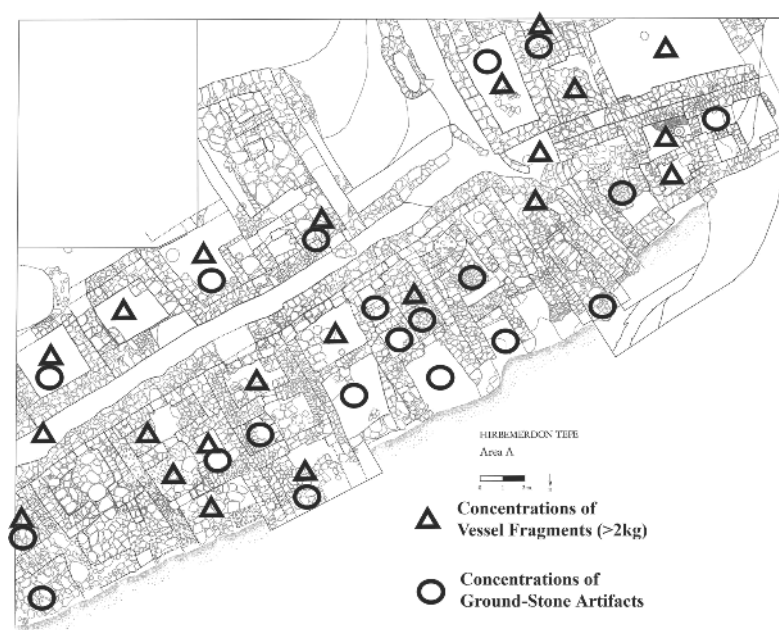


Fig. 19. The architectural complex of the High Mound showing the presence of grinding stones and ceramic vessels in individual rooms. The distribution suggests that specific activities were organized spatially within the buildings.

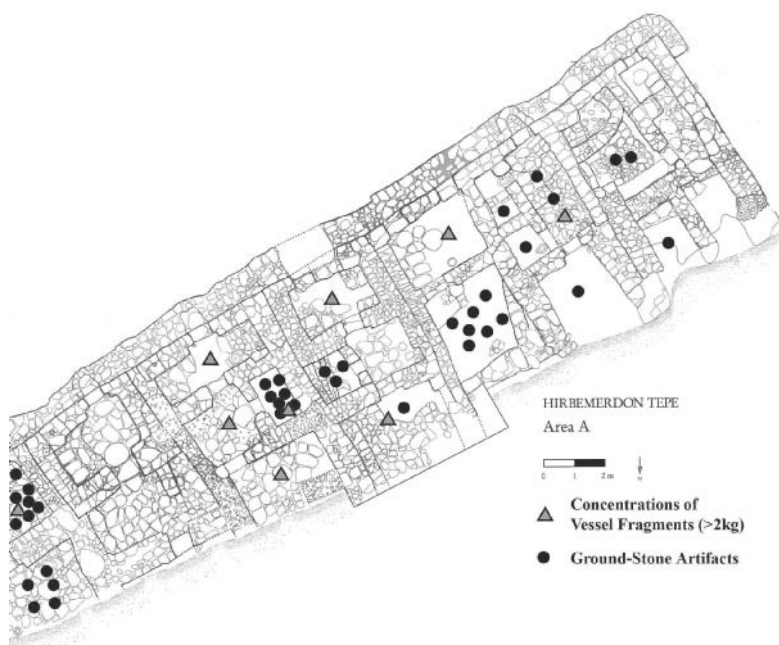


Fig. 20. A closer view of the northeastern section of the architectural complex showing the presence of individual grinding stones within specific rooms of the agglutinated buildings. In general the distribution is concentrated in certain rooms while densities of ceramic vessels are found in other areas.



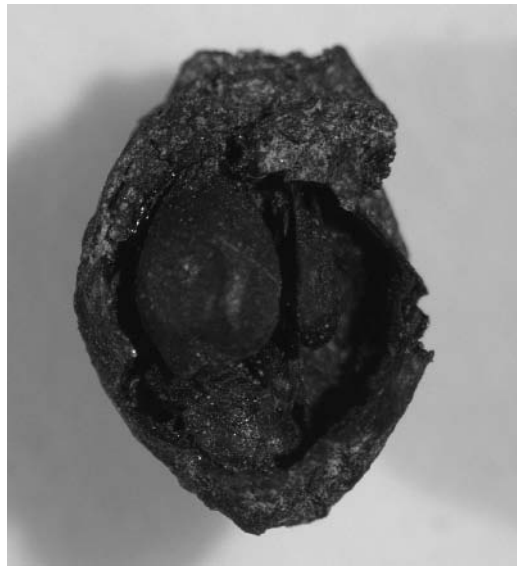


Fig. 21. Whole grape from room 27 in the architectural complex (L. 231): seeds are visible in the interior.

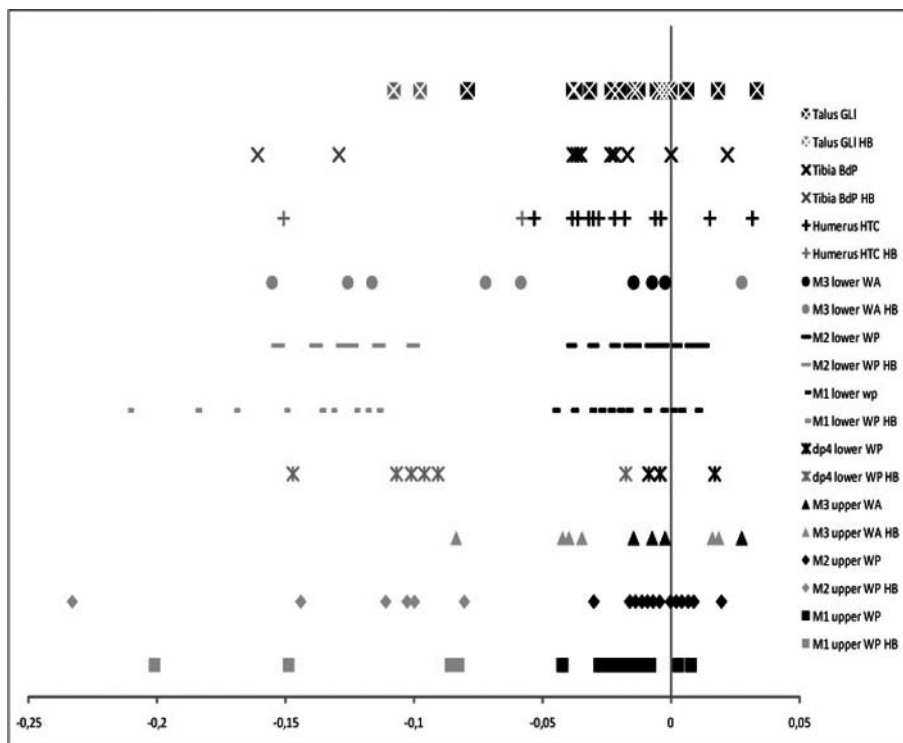


Fig. 22. Log ratio of modern wild boar from Turkey (black shapes) compared with archaeological remains from Hirbemerdon (HB, light grey). Each line represents the log ratio for measurements of a selected skeletal part. Measurements abbreviations and definitions, modern wild boar measurements and standard value (0) taken from Payne and Bull 1988.



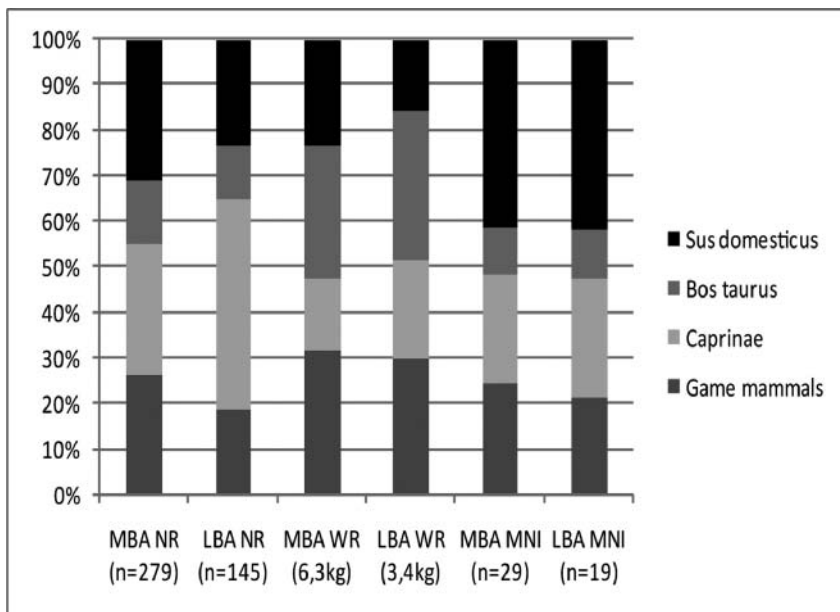


Figure 23. Comparison of the relative frequencies of meat provider mammals by means of the Number of Remains (NR), the Weight (kg) (WR) and the Minimal Number of Individuals (MNI).

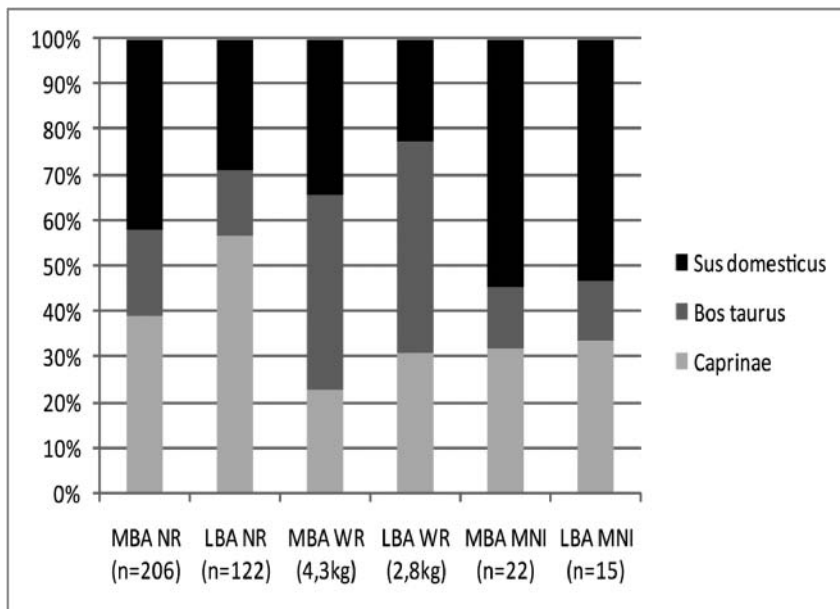


Figure 24 . Comparison of the relative frequencies of the principal domestic mammals by means of the Number of Remains (NR), the Weight (kg) (WR) and the Minimal Number of Individuals (MNI).



Fig. 25. Fish vertebra



Fig. 26. Proximal section of a *cervidae* metacarpal showing manufacturing traces



Fig. 27. Tine showing manufacturing traces



Fig. 28. Fragment of an unshed antler



Fig. 29. Two shed antlers

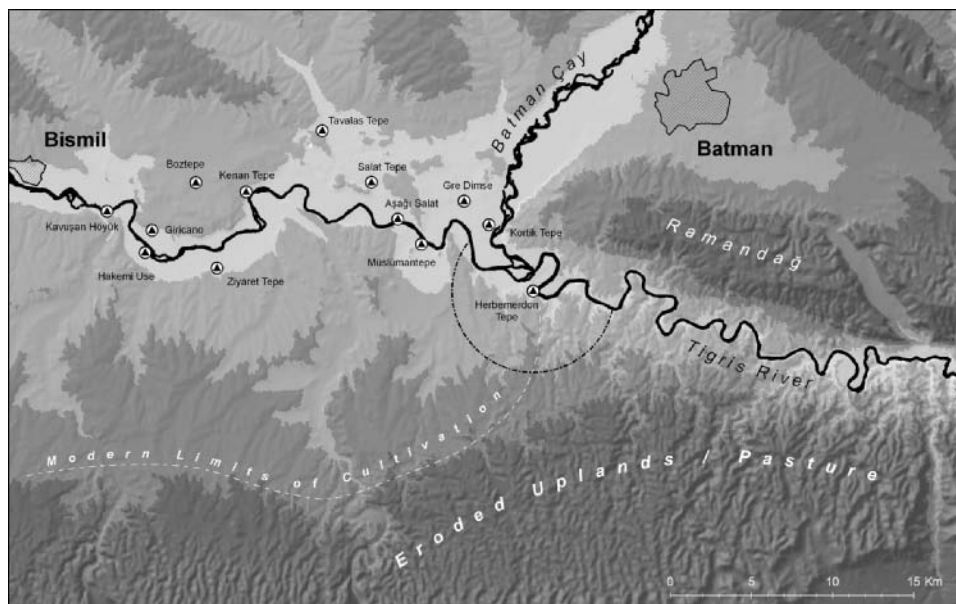


Fig. 30. The Upper Tigris river valley, with excavated sites and the Hirbemerdon Tepe Survey region indicated. Topography from the Shuttle Radar Topography Mission (SRTM) 90 m digital elevation model.

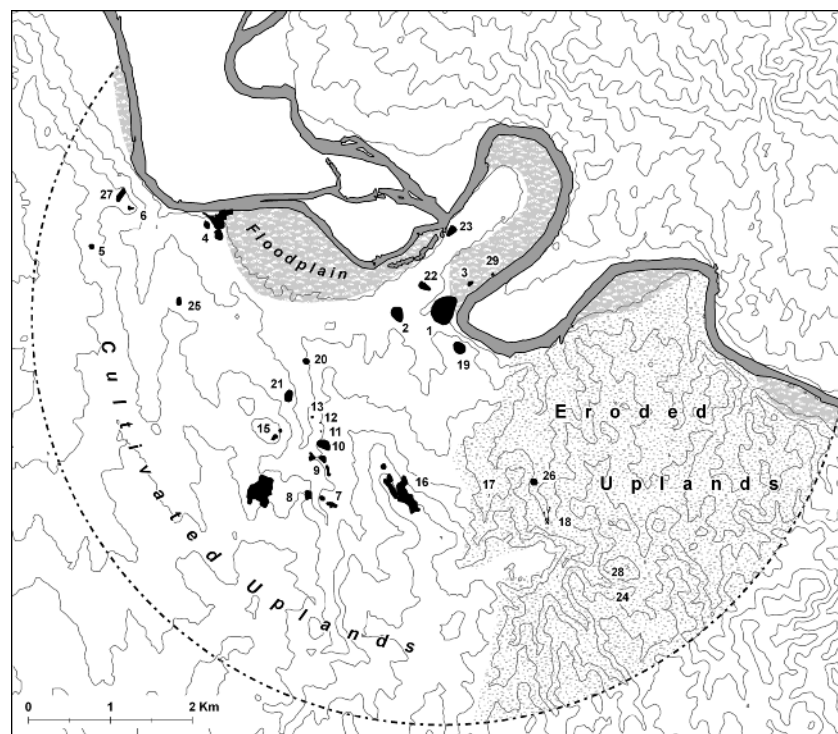


Fig. 31. The Hirbemerdon Tepe area, with sites identified in 2007 indicated. Contour lines at 25 m intervals.



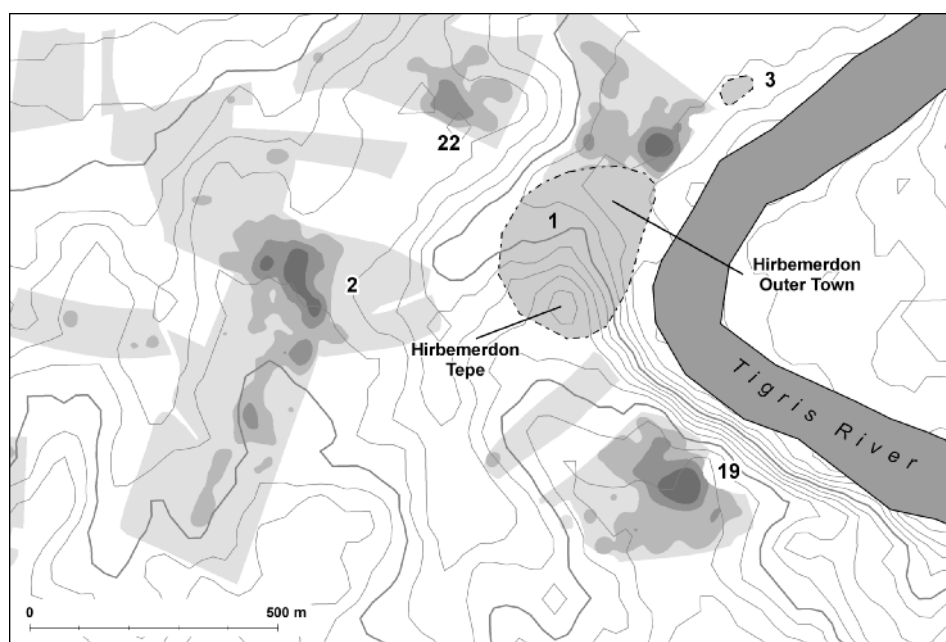


Fig. 32. Interpolated sherd densities and sites around Hirbemerdon Tepe. Boundaries of sites with dashed outlines were defined non-systematically. White areas were uncollected. Contours at 5 m intervals.



Fig. 33. Site 3, a buried LC 1 site, from the west, with the Tigris in the background. Note the lighter-colored archaeological layers in the section.



Fig. 34. Campsite at Site 18 from the south.

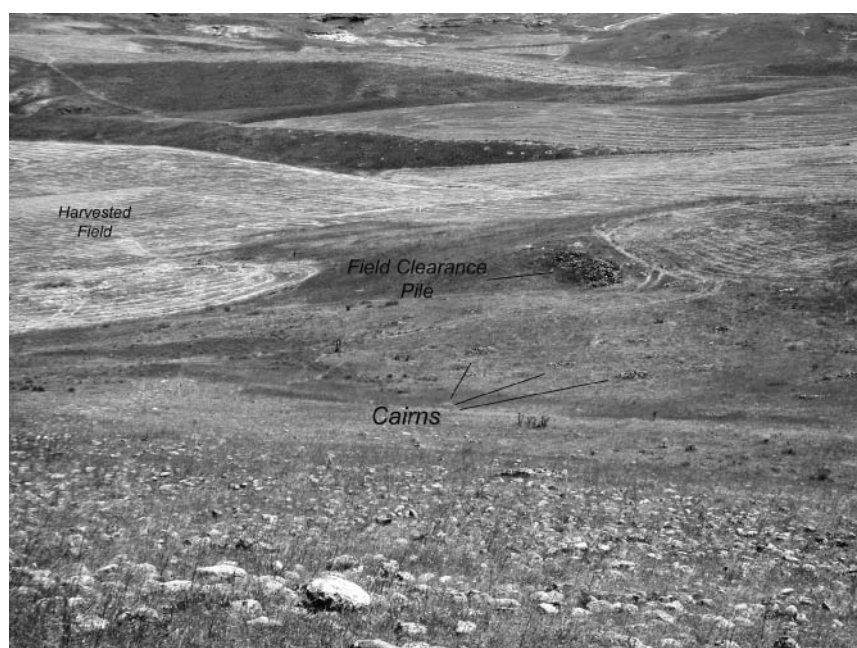


Fig. 35. The northeastern slope of Site 16 from the west. Cairns average 2 m in diameter. The field clearance pile was probably formed by the removal of cairns from the adjacent field. The cairn field in the foreground is thus a window of landscape preservation.



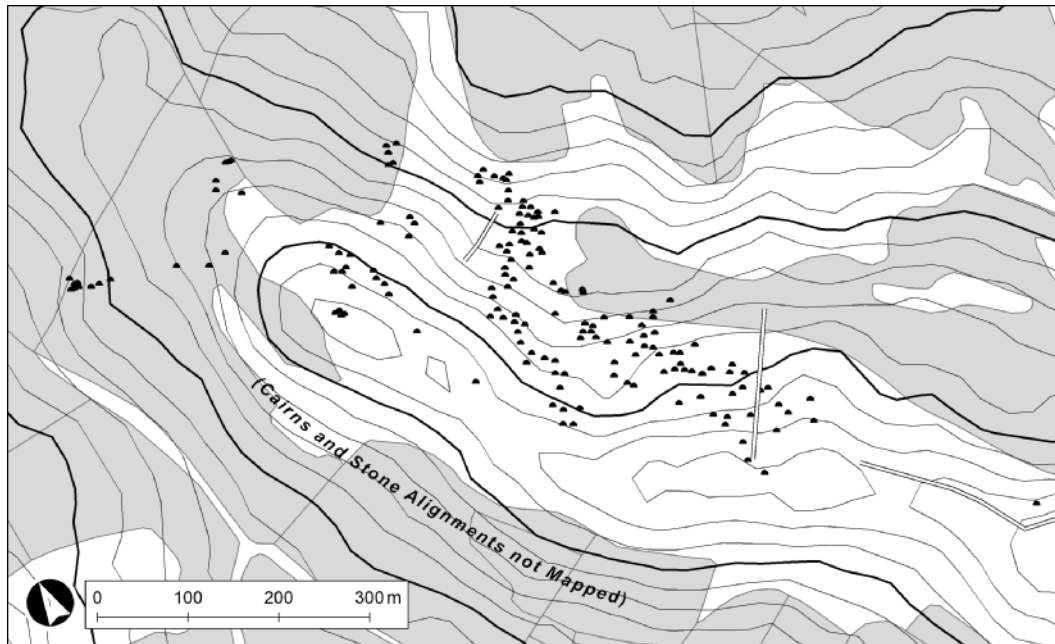


Fig. 36 -- Partial map of cairn distribution and stone alignments at Site 16. Gray areas are currently under cultivation. Contours at 5 m intervals.

## SETTLEMENT AND LANDSCAPE TRANSFORMATIONS IN THE AMUQ VALLEY, HATAY. A Long-Term Perspective

*Fokke Gerritsen, Andrea De Giorgi, Asa Eger, Rana Özbal, Tasha Vorderstrasse*<sup>1</sup>

### INTRODUCTION

Fokke Gerritsen

A decade of regional survey between 1995 and 2005 in the Amuq Valley in the Hatay province of southern Turkey (fig. 1), following seminal work done in the 1930s (Braidwood 1937), has produced extensive datasets to study the history of human occupation and landscape development in the region. The main insights from the work done by the Amuq Valley Regional Project (AVRP) have been presented recently by Casana and Wilkinson (2005a, in Yener 2005), with significant earlier publications including the University of Chicago dissertation by Jesse Casana (2003), and a multi-authored report on the 1995 to 1998 fieldwork seasons (Yener et al. 2000a). Particularly important results of the project concern the complex interplay between human settlement and environmental history in the later first millennium BCE and the first millennium CE.

These accomplishments of research and publication notwithstanding, ongoing research, including long-term excavation projects in the Amuq Valley at Tell Atchana and Tell Tayinat, continues to refine and alter our current understanding on many points, in particular concerning the Bronze and Iron Ages. There are good reasons, however, to present a synthesis at this point in time on the landscape and settlement history of the Amuq Valley, focusing on transformations in two separate periods, i.e. the pottery-Neolithic and Chalcolithic periods on the one hand, and the Hellenistic to Ottoman periods on the other. Our understanding of the nature and background of transformations in the settlement patterns in these periods has improved significantly in recent years. The current paper builds on the insights presented in said publications, but develops more detailed and differentiated models regarding the diachronic interactions between settlement, landscape, economy and society.

During both periods a significant proportion of the population in the region was spread out over many small dispersed settlements, whereas the Bronze Age and Iron Age settlement patterns were formed by tell-based, nucleated lifestyles. As a result of the methodological challenges of surveying mounded sites, ideally requiring multiple visits during different seasons to compensate for the relative scarcity of surface artefacts belonging to the earlier periods of occupation, the analysis of the settlement history of the Bronze Age and Iron Age has not yet proceeded to the same extent as that of the preceding and following periods.

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It is becoming more common practice for survey based research projects in the Near East to incorporate those chronological periods that until fairly recently were considered to belong to separate domains of classical or medieval studies. But AVRPP stands out in the degree to which it has developed an integrated landscape-archaeological perspective on developments from Neolithic to modern times. This perspective, also espoused by the authors of this article, combines an analysis of continuities and changes during particular chronological periods with studies of long-term structures and transformations. Archaeological, environmental and historical datasets are integrated to the extent feasible. The local stage, with particular attention for the interaction between human and environmental agencies, has to be understood within the regional and supra-regional historical scales at which political events and economic trends play out. To date, published archaeological syntheses of this nature are rare.

The final season of fieldwork of which the results are incorporated in this paper was carried out in the summer of 2005, under the direction of the first author. This post-dated the completion of the papers in Yener (2005). Work concentrated on the southeastern quadrant of the Amuq Plain, east of Demirköprü and south of Kumlu (fig. 2), and several goals were accomplished in the short, two week season. Nine new sites (AS 347 to AS 355, see the Appendix), mostly initially recognized on the CORONA imagery, were visited and collections were made at eight of them. The site database was further enhanced by enlarging the existing ceramic collections of about a dozen sites, in most cases leading to the discovery of previously unknown periods of occupation. Some questions were clarified regarding the localization of sites that had been visited and numbered by Braidwood's team in the 1930s, but not since. The Appendix to this article lists amendments and additions to the *Gazetteer of Archaeological Sites* (Casana and Wilkinson 2005b). The total number of sites which were examined by the Amuq Valley Regional Project and the authors of this study now numbers 287 (fig. 3). The majority of the remaining sites were recorded by Braidwood, but are in Syria or otherwise inaccessible to the project team. Finally and most importantly, analysis was completed of the ceramic collections of all sites recorded since 1995 for the periods considered in this paper.

The spelling of topographical names has changed regularly during the periods for which they can be inferred from textual sources in multiple languages. As long as it is clear which location is meant (e.g. Pagrae/Baghrās/Bakras), no attempt is made below to impose a single spelling. In other cases (e.g. Gephyra/Jisr Hadid/Demirköprü) multiple names are given whenever relevant.

## LANDSCAPE AND GEO-ARCHAEOLOGY OF THE AMUQ VALLEY

Fokke Gerritsen

The Amuq Valley (called also Plain of Antioch, presently Amik Ovası) lies to the northeast of the city of Antakya, ancient Antioch, in southern Turkey (fig. 3). At about 80-100 meters above sea level, it is a fertile and well-watered plain, about 40 km north-south and 35 km east-west in size (but becoming a much narrower valley in its northern reaches), separated from the Mediterranean by the high Amanus mountains and from the

Syrian plains to the east by lower hill ranges. Several rivers flow into the Amuq Plain, the largest being the Orontes river coming from the south, the smaller Afrin and Kara Su streams entering from east and north. Until its drainage in the 1960s, the Lake of Antioch and surrounding wetlands in the central-western part of the plain collected the waters from Afrin and Kara Su before draining into the Orontes river not far upstream from Antakya. The Orontes leaves the plain towards the southwest, through a narrow valley in which Antakya is situated, and discharges into the Mediterranean a further 30 km downstream.

It would be superfluous to summarize the recent literature on the geo-archaeology of the region (cf. Casana 2003; Wilkinson 1997, 1999 and 2000; Wilkinson et al. 2001). However, some salient points need to be briefly presented, as they inform the current study in a fundamental way. A major transformation consists of a change from a tell-based settlement pattern with large and small nucleated settlements to a highly dispersed pattern of numerous small settlements (Casana and Wilkinson 2005a; Casana 2003). The evidence points to a date for this transformation during the first millennium BC, largely completed already by the beginning of the Hellenistic Period. This transformation is all the more remarkable given the long-term stability of the preceding tell-based settlement system, which has prehistoric roots (for example Tell Kurdu, AS 94) but comes to full development in the Early Bronze Age. Accompanying the dispersal of settlement in the valley itself is a process of colonization of the uplands surrounding the Amuq Plain, in particular the hill regions to the south (Jebel al-Aqra). Bronze Age and Iron Age sites in these areas are scarce whereas dozens of small Roman and Late Roman sites dot the slopes of the same uplands. This process will be discussed in more detail below.

Observations of sedimentary sequences at numerous locations in the valley and uplands to the south have been very useful for building an understanding of the major environmental changes in the area itself (Wilkinson 2000; Casana & Wilkinson 2005a). In addition, palynological and palaeo-climatic records from other parts of the Levant help understand some of the broader regional trends (Casana 2003: 55-58). For the periods under consideration in this paper, two major processes of environmental change are important. There is strong evidence for extreme soil erosion from the hill slopes, and the aggradation of sediment in the valleys in the uplands and in parts of the Amuq Valley itself. Many examples have been recorded of deep sedimentary deposits overlying well-developed early or mid-Holocene soils. Later deposits often consist of coarser sediments than the earlier ones, indicating that deposition was from higher energy flows. Wherever information is available to date these phases of erosion, for example a field wall associated with Hellenistic pottery covered by six meters of coarse gravel observed in a section of gravel extraction pits at the foot of the Amanus mountains (Casana 2003: 73), it points to the early first millennium CE.

A second process that drastically changed the environment of the Amuq Valley is the expansion of the Lake of Antioch and surrounding marshlands. The lake was a prominent feature of the plain until the 1950s, but has not always been there. This has long been indicated by the existence of archaeological sites sitting as islands in the lake at the time of the initial survey by Robert Braidwood. Recording of sites within the former lake by the AVRIP team dates their main phases of occupation to the Bronze Age, with small-scale inhabitation in the Iron Age and later (Wilkinson 1997; Casana and Wilkinson

2005b). Analysis of a core into the former lakebed, observations of beach ridges and the extension of lake sediments over archaeological features indicate that a major phase of lake and marsh expansion probably occurred in the mid to late first millennium CE. Marsh sediments cover systems of irrigation canals associated with Roman and Late Roman sites (Casana 2003: 65, fig. 2:12), with little or no evidence so far for occupation beyond the Early Islamic period. Mentions of the lake in historical sources suggest that there was a lake as early as the Hellenistic period, and confirm the presence of the lake as a major geographical feature in Roman and Islamic times (Wilkinson 1997; Casana 2003: 65-67; see below).

Wilkinson and Casana are careful in their work to emphasize that causal relationships are difficult to establish, but it is distinctly possible that the expansion of the lake has its origin in the extreme hillslope erosion, leading to sedimentation of rivers and canals and aggradation of the valley floor, resulting in poor drainage and flooding. The erosion processes themselves may well be related to the strong increase in human settlement and cultivation of the upland areas in the Hellenistic through Late Roman period (see below), presumably accompanied by deforestation and a destabilization of the physical landscape. In addition, increased storminess that occurred in the same period according to some palaeo-climatic data, would have come with episodic surges in runoff from the slopes, and may have contributed to the erosion.

#### THE PRE-BRONZE AGE PERIODS

Rana Özbal

This section does not intend to provide a comprehensive review of pre-Bronze Age settlements in the Amuq Valley but rather focuses on sites with prehistoric levels surveyed during the 2005 season. As mentioned in the introduction, the 2005 survey area was restricted to the southeast quadrant of the valley. Materials from the Amuq A through Amuq F Phases (and the related Amuq G Phase of the earliest Bronze Age) were found at ten of the twenty-eight sites visited during the season. When the Amuq F is not considered, however, this number does not exceed four.<sup>2</sup>

Given that the 2005 survey area encompassed the so-called “Çakaltepe sedimentary window” of very low alluviation since the early Holocene (cf. Wilkinson 2000), one finds a higher density of preserved prehistoric sites here than elsewhere in the valley. Despite the “window,” numbers of recorded sites are comparatively low (fig. 4); other prehistoric occupations presumably remain undetected underneath later occupation levels of tell sites.

In addition to the problem of finding and identifying prehistoric sites, we lack well-established typochronologies to refine local dark faced burnished ware assemblages. Painted wares with Halaf and Ubaid-like motifs inspired by supra-regional trends tend to

<sup>2</sup> The Amuq A-B refers to the Pottery Neolithic. The Amuq C is the phase during which Halaf influences enter the local pottery assemblage. In the Amuq D and E, we begin to see Ubaid influences of the Middle Chalcolithic, while the Amuq F is a predominantly Late Chalcolithic assemblage.

be the main chronological markers. Recent excavations in the Rouj Basin to the south and sites to the north such as Yumuktepe provide comparative material which could help in refining the early Neolithic Amuqian plain wares (Balossi 2004a; 2004b; Iwasaki and Tsuneki 2003). Future research at a local Neolithic site is bound to bring definition to the existing chronologies and probably – given the El-Rouj sequence – yield earlier horizons and proof for the sorely missing pre-pottery levels. A thorough understanding of the plain wares is critical for the subsequent phases as well; the recent excavations at Tell Kurdu (Özbal et al. 2004; Yener et al. 2000a, 2000b), for example, indicate that 94-95 percent (by count) of the ceramics from the Amuq C Phase lack painted decoration (Diebold 2004; Özbal 2006). A re-examination of all prehistoric survey collections with the knowledge and expertise gained from the excavated ceramics is necessary.

### **The Neolithic of the Amuq A-B Phases**

Sites yielding early pottery-Neolithic remains are rare, and in the 2005 season only one site dating to this phase was discovered. This brings the total number of sites in the Amuq Valley with Pottery Neolithic levels to eleven. Located south of the Çakaltepe sedimentary window, AS 349 was visited because an anomaly was noted on the satellite imagery. Site size estimates are difficult given the thick agricultural cover, but the mounded part of the site appears not to exceed two meters in height. No post-Neolithic ceramics were noted, and the present collection includes wares which can be assigned to the Amuq A Phase, although a few of the forms may continue into the Amuq B as well.

The two main ware categories found at AS 349 are those that typically dominate Amuq A assemblages: coarse simple wares and dark faced burnished wares. The coarse wares have dark cores and orange, somewhat friable surfaces, as is typical of the phase. Large ledge handles, like the one in figure 5.2, are among the shapes that exemplify the dark faced burnished ware sherds of the Amuq A and B phases. The assemblage also yielded an impressed sherd (fig. 5.4), as well as a number of lithic artifacts. The mentioned forms and wares all have simple lips and the majority is comprised of open shapes. Shape and ware parallels with the El-Rouj 2b assemblages are most notable.<sup>3</sup> Some shapes also appear at Mersin Yumuktepe in levels 29-26 (Balossi 2004a: 138). Following Balossi's designations, this site would probably correspond to a later part of the Amuq A assemblage, or what she calls Amuq A2, and possibly to the earliest beginnings of the Amuq B (Balossi 2004b).

### **The Amuq C Phase**

Interestingly, none of the sites visited during the 2005 season date to the Amuq C Phase.<sup>4</sup> In fact, this phase seems to be represented by fewer sites than other pre-Amuq F phases. This could be due to the fact that painted Halaf-like wares are rare and non-

<sup>3</sup> Overlap with the subsequent 2c phase is evident for AS 93 (Iwasaki et al. 1995; e.g. fig. 5.5)

<sup>4</sup> Woolley (1950: 64) claims that "Tell Halaf painted wares" were found at Tell esh-Sheikh (AS 135) but too little is published to ascertain this statement. While the plain wares from the earlier phases do resemble Amuq C sherds, they could also be Amuq D in style.



painted examples were not always recognized as belonging to the Amuq C Phase. Alternatively, although the exact processes remain elusive, Tell Kurdu (AS 94), estimated to have been 12-15 hectares in the Amuq C, may have drawn in much of the local population from smaller sites scattered across the valley. The entire site-area was probably not occupied simultaneously, but the fact that the overall size of the settlement exceeds all contemporaneous ones in the valley suggests that it was a central location of some importance. The discovery of other roughly contemporaneous settlements of similarly large size in the nearby provinces of Kahramanmaraş (Domuztepe; Campbell et al. 1999; Carter et al. 2003) and Urfa (Kazane Höyük; Bernbeck, Pollock and Coursey 1999) may indicate that the concept of large centers was not uncommon in this period.

### **The Chalcolithic of the Amuq D-E Phases**

Three sites dating to the Amuq D-E Phases were visited in 2005 (fig. 4): AS 135 (Tell esh-Sheikh), AS 168 (Karaca Khirbet Ali) and AS 97 (Tabarat Tarfah). The first two are significant because they figure prominently in the literature on discussions of the Amuq E Phase. While the existing survey collections for both sites were adequate, the visits allowed for clarification on the chronological issues central to the late prehistoric periods of the Amuq sequence; there has been a general disagreement among scholars about how these sites correspond to the Amuq E from Tell Kurdu. The third site, Tabarat Tarfah, not visited since 1937, is discussed at the end of the section.

Although the ceramics at Tell esh-Sheikh and Karaca Khirbet Ali fall within the general Amuq E range, some painted motifs and their manner of execution are distinctively different than those found at Tell Kurdu (see fig. 6; Braidwood and Braidwood 1960: 203-204; Woolley 1950: 64, also see French 1985: 266). Woolley assumes that the styles from Kurdu and Tell esh-Sheikh (AS 135) are contemporaneous and only show differences because the inhabitants of each settlement reinterpreted the general Ubaid theme in their own local way (1950: 64; French 1985: 266). The Braidwoods, on the other hand, are of the opinion that the Tell esh-Sheikh motifs represent a style that is a later or more mature variant of the typical Amuq E wares (Braidwood and Braidwood 1960: 204). Had examples of the full Tell esh-Sheikh ceramic sequence (including plain wares) from levels I through XII been published, the answer to this typo-chronological puzzle would probably be obvious.

Discussions to date (by Woolley, the Braidwoods and French) have justifiably focused on the differences between the Tell esh-Sheikh sherds and the Amuq E sequence best known from Kurdu, perhaps at the expense of similarities. However, one observation that can be made from the sherds collected at Tell esh-Sheikh during the 2005 survey season is the degree of overlap (compare for example fig. 6.7 with Braidwood and Braidwood 1960: 191, fig. 148.22, fig. 6.9 with Braidwood and Braidwood 1960: 182, fig. 142.29). It is possible that these sherds, which were collected from a now highly bulldozed mound, chronologically correspond with the Amuq E of Kurdu, but only further research will be able to clarify this issue.

Another Amuq E site visited in 2005 was Karaca Khirbet Ali (AS 168), located not far from Judaidah along the foothills in the southeast part of the plain. Our

observations confirm the idea that Karaca Khirbet material is a later manifestation of the Ubaid-related phase in the Amuq. Collections here noted a chronological difference between the upper and lower slopes of the hillside. The lower slopes yielded predominantly Late Amuq E materials (fig. 6.3, 6.6, 6.8, 6.10, and 6.12) that resemble wares and motifs known from Tell esh-Sheikh (AS 135, see French 1990: figs 3-4) and Tabara el Akrad Level VII (AS 182, see Hood 1951: fig. 6.1). Collection in the upper slopes was more difficult, due to intense cultivation, but here we see a low-rising mounded settlement with a mixture of Amuq E and later EBA materials.<sup>5</sup>

The final site with Amuq E occupation visited in 2005 is AS 97 (Tabarat Tarfah). This site was described by Robert Braidwood (1937: 30) as being a small mounded settlement, but at present not only has the mound been bulldozed completely flat but the höyük soils were removed by truck for use elsewhere. Collections here yielded Amuq E sherds which are closely in line both in terms of shape and motif with the Amuq E assemblage from Tell Kurdu. Typical also of the Kurdu assemblage, we find that the designs are applied using the multiple-brush style. Classic hatched chevrons and horizontal lines are also common (fig. 6.2, 6.4). In addition to the Amuq E assemblage, Tabarat Tarfah yielded sherds which are unmistakably Amuq F in form and temper (fig. 5.10, 5.11, 5.12, and 5.14).<sup>6</sup> Overall, the Late Chalcolithic shows a real break in ceramic traditions from the Amuq A-E, adding to the importance of understanding the Amuq E-F transition. Unfortunately, because the site is bulldozed, we have lost a rare opportunity to investigate the Amuq E to F transition here.

### **The Late Chalcolithic of the Amuq F**

There are a considerable number of sites that date to the Late Chalcolithic (fig. 7). In fact, more than half of the prehistoric sites visited in 2005 yielded ceramics dating to this period. Illustrated examples (see fig. 5.10-5.15) come from Tell Kirmīt (AS 172), Tabarat Tarfah (AS 97) and Büyük Ayrancı (AS 157). Hürriyet (AS 107), Tell al Far (AS 109) and AS 355 also yielded Amuq F ceramics. All are new additions to the site-gazetteer; they were either visited for the first time since the 1930s or were newly discovered in 2005.

Casana notes how the Amuq F brings with it a new settlement pattern (2003: 213). By the Amuq F we find numerous large sites in the central part of the plain. This he sees as contrasting with the smaller “shifting occupations” of the Neolithic and Chalcolithic. At 20 ha, Tell Imar (AS 101) with massive cut-stone constructions showing on the

<sup>5</sup> In the upper slopes we also discovered a few sherds that may pre-date the Late Amuq E Phase that could contribute to a further understanding of the site. For Karaca Khirbet Ali, the Braidwoods favor an interpretation that this settlement represents a “post-Kurdu manifestation of Phase E pottery decoration.... representing a late recrudescence of a decoration used in the previous Phase (D)” (1960: 204, also see 1960: 512) and propose that the inhabitants of the Late Amuq E Phase began to recopy old Amuq D styles in their motifs. An alternative possibility is an earlier phase of occupation, ultimately contributing to the presence of some of the earlier motifs, but further collections and excavations are necessary to confirm this tentative scenario.

<sup>6</sup> Because the Amuq E ceramics from Tabarat Tarfah appear close in style to the Amuq E from Tell Kurdu, and we believe that this represents an earlier stage of the Amuq E than Tell esh-Sheikh and Karaca Khirbet Ali, there may have been a hiatus of occupation between Phases E and F at Tabarat Tarfah.

surface, is probably the largest Late Chalcolithic settlement, but, as noted by Casana, it is one of several other large sites dating to this phase, like Karacanlık (AS 92), AS 333 and probably Tell Karataş (AS 117) and Üçtepe (AS 108; Casana 2003: 213).

However, with six newly discovered small Amuq F sites in the 2005 season, and numerous other known small sites (fig. 7) the Late Chalcolithic is *also* characterized by an abundance of minor settlements. This is confirmed by a general look at the site-gazetteer (Casana and Wilkinson 2005b). It is also significant that many Late Chalcolithic settlements show no occupation prior to the Amuq F Phase (Casana 2003: 214). This pattern of numerous large centers as well as a number of smaller sites, most of which were newly founded, may be an indication for growing population densities in this period. However, the possibility that alluviation and other environmental and cultural factors have led to an under-representation of earlier sites cannot be discounted.

The Phase F wares collected during the 2005 season are from smaller sites and to a great extent are comprised of chaff-faced simple wares. Smooth-faced wares and wares with reserved decoration (e.g. Braidwood and Braidwood 1960: 229-233) were not noted. It would be worth investigating whether such wares only appear in larger central settlements. The best parallels in forms and wares come from the Qoueiq Valley (Mellaart 1981), Hama Level K (Ingholt 1934), although parallels in shapes from Kurban Höyük (Algaze 1991), Hacinebi Tepe (Pearce 2000, Pollock and Coursey 1995), Kenan Tepe (Creekmore 2007) and Leilan (Schwartz 1988) are also notable.

### **Discussion: prehistoric settlement patterns**

If the currently known pre-Bronze Age sites are to some degree a representative sample, a hypothetical development of prehistoric settlement patterns can be proposed. During the Amuq A and B Phase, there was dispersed occupation of the valley in small sized settlements. It is possible that there was a certain degree of clustering during the Amuq C Phase, with fewer small settlements, and a significant proportion of the valley population at the large site of Tell Kurdu (AS 94). Yet this observation must be considered tentative because the survey assemblage needs to be reexamined with a better typo-chronological understanding of the non-painted wares. A re-dispersal seems to have taken place by the Amuq E (or possibly already by the Amuq D). Tell Kurdu remains inhabited, but as a much smaller settlement than before. In the Amuq F period, a distribution of both large and small sites indicates a growing overall population.

Unlike the later periods covered by this article, we lack the ability to discuss the distribution of prehistoric settlements over different environmental zones. Prehistoric sites are concentrated across the valley floor and are largely absent from the foothills encircling the plain (fig. 4, 7). To date, only four prehistoric non-valley-floor sites have been discovered. Even though the evidence is meager, these sites suggest that the uplands were exploited, if not actually inhabited in prehistory as well. Hillslope erosion and soil deposition in the upland valleys negatively affect the possibilities to document prehistoric occupations in for example the Jebel al-Aqra region.

The earliest prehistoric remains from an upland site probably come from AS 26, (Ada Tepe), located on a low hill to the northwest of the plain (fig. 5.3, 5.9). The data

remain sparse, but Ada Tepe was probably inhabited in the early pottery-Neolithic phases. Occupation may also have continued into the Amuq C Phase, but no painted Halafian type ceramics were found. Upland occupation for the Amuq E Phase is better represented by AS 168 (Karaca Khirbet Ali) and AS 246 (Çakallı Karakol). The former site, discussed above, lies on a limestone outcrop overlooking the Afrin Valley. Perhaps more remarkable, Çakallı Karakol is strategically located within the Belen Pass, which connects the Mediterranean Sea to the Amuq Plain. The discovery of prehistoric levels at this site indicates that this mountain pass functioned as a trade and travel route long before the periods discussed in the following sections of this article. Occupation of highland pastures, passes and other upland locations likely continued into the subsequent Amuq F Phase of the Late Chalcolithic. Although currently represented by a single example, AS 238 (Serinyol Kale), this settlement may point to the presence of other yet-to-be-discovered foothill sites dating to the Late Chalcolithic.

#### THE HELLENISTIC PERIOD (3<sup>RD</sup> TO 1<sup>ST</sup> CENTURY BCE)

Andrea De Giorgi

The dangers of overemphasizing the role played by provincial capitals and ancient *megalo poleis* on their respective territories are well known, and the AVRPs survey sampling strategy and field approach were designed to offset this potential bias. It is clear, nevertheless, that settlement in the Amuq Valley during the Hellenistic and Roman eras was dynamically linked with Antioch's urban, political and economic developments. On the one hand, this perspective enabled us to amply draw from a considerable body of textual sources, thus being able to historicize the archaeological data and offer interpretative frameworks about the dynamics that shaped the valley starting in the Late Hellenistic period. On the other hand, the problematic nature of Antioch's archaeological information presented a formidable challenge (De Giorgi 2007). Hitherto unknown, Antioch's urban system had to be understood on the basis of the abundant archaeological record retrieved by the AVRPs in the city's hinterlands and chora.

Our research proceeded in three stages. (1) The archaeological survey was particularly effective in investigating the landscape and documenting the existence of settlements, industries, and road networks on which Antioch depended for its sustenance and the realization of its economic potential. (2) The study of the artifacts collected in the survey, primarily pottery, enabled us to provide each of these sites with a firm chronology, while Geographic Information Systems (GIS) facilitated the analysis of their settings and interconnections. (3) This evidence was subsequently studied against the background of the legal and political forces that shaped the Seleucid kingdom and later, the province of Roman Syria in Roman times. Rural and city markets, agricultural strategies, and the exploitation of varied resources were placed in their proper historical contexts.

Founded in 300 BCE by Seleukos Nikator, Antioch was neither the outcome of a Macedonian military settlement, nor the re-foundation of an already existing urban milieu (Downey 1961, 67-82). According to myth, the Seleucid king founded the city on the 22<sup>nd</sup> of Artemisius (May) to honor the memory of his father Antiochus (Jus. 15.4.7-8.). The

city was built on a site where there had been favorable omens, likely in the southern sector of the future Roman city (Will 1997, 99-101). In addition, the entire population of near-by Antigonía was forcibly relocated to Antioch; the former, founded by Antigonos in 306 BCE, allegedly ceased to exist shortly afterwards.<sup>7</sup> While Seleucid urbanism and politics in Asia Minor are well documented, the same cannot be inferred for northern Syria and Antioch. Frustrated by a lack of inscriptions and monuments, the AVRP research nonetheless took into account the centrality of the region that the textual sources accord, especially at the time of Antiochos III, as Polybios suggests (Ma 1999, 7-8).

The AVRP data suggest that Antioch produced a dense network of sites, with a concentration in the central Amuq Valley (fig. 8), with a peak in numbers during the 2<sup>nd</sup> c. BCE, a phenomenon that parallels the growth of Antioch at this time (Strab. 16, 2, 4). How this settlement shaped the central Amuq Plain, the Amanus Mountains, and the limestone hills of the Jebel al-Aqra is the subject of this section. Probably on account of its fertility, the central Amuq Plain drew dense settlement activity as early as the beginning of the 3<sup>rd</sup> c. BCE. It can be safely argued that these early communities, most likely colonies promoted by the central government (see below), seized the most profitable and easy to exploit regions according to a scheme that placed more emphasis on the quality of the soil rather than on vicinity to the city.

All in all, hierarchy of settlement and site dispersal are the trends that the archaeological record brings into focus. Most sites can be safely interpreted as small farmsteads, being rather non-descript and small in size (under one hectare). A prime example of a hierarchical settlement pattern can be seen at AS 254, a large site on the broad, central silt plain of the Afrin. Measuring some 9 ha., it consisted of two main areas of occupation and featured ashlar blocks related to monumental construction of an unknown nature. It was densely inhabited from the 3<sup>rd</sup> century BCE onwards, as fragments of black glaze *kantharoi* demonstrate. Many of the ceramics collected date to the 2<sup>nd</sup> century BCE, with a predominance of bowls with incurved rims slipped in brown, red and black (fig. 9 shows Hellenistic ceramics from various Amuq sites). Various fish-plates of Antioch type I, 17 also support this chronological framework. AS 254 was surrounded by a system of four very small farms all measuring less than one hectare. The same types of ceramics, from black glaze ware to fish-plates and early Megarian bowls, were found at each of these sites. This settlement scheme of a center with smaller satellite sites was replicated by AS 108 and quite possibly by other sites.

Not all sites recorded in the central plain, however, are incorporated in hierarchical configurations. Other nucleations that were occupied in the late 3<sup>rd</sup>-early 2<sup>nd</sup> century BCE measure less than one hectare, and represent a more dispersed pattern of occupation. These sites were plausibly the result of the seizing of more marginal and less productive pockets of land. The expansion of the Lake of Antioch and its system of marshes, at this time in particular, played an important role in determining niches that were available for occupation and cultivation. Small sites such as AS 75, AS 180, and AS

<sup>7</sup> The exact location of Antigonía is a thorny subject. Diodorus Siculus contends that the city was 'well situated to watch Babylonia and the upper satrapies, and also lower Syria and the provinces as far as Egypt', Diod. 20. 47. A suggestive allusion by Dio Cassius, however, might imply the town's location in the Amanus Mountains: see D.C. 40.29.

181 were in all likelihood farms that began in the late 3<sup>rd</sup> century BCE. Despite the typical settlement continuity of most sites in the Amuq Valley,<sup>8</sup> these were particularly short-lived: fishplates of the early 1<sup>st</sup> c. BCE and early Eastern Sigillata A (ESA) vessels represent the youngest forms before abandonment. Within a few generations they were either surrounded by marshes (AS 75) or submerged (AS 74, AS 180, AS 181).

Hellenistic period Tell Judeidah (AS 176) and Üç Tepe (AS 108) in the eastern sector of the plain, each measuring approximately two hectares in size, are exceptional in being situated on top of ancient mounds in the plain. Early Megarian bowls, Pergamene wares, and brown/red-slipped wares are well represented among the abundance of collected materials (Friedman/Reichel 1995, 67-70).

A distinctive aspect of Hellenistic settlement in the Amuq Valley is the first appearance of sites in the highlands. In the Jebel al-Aqra a few small sites along the slopes of the Tanışma Valley were identified. Plow-induced erosion has dramatically modified this ecosystem, making the study of the ancient landscape difficult. Nevertheless, traces of terracing suggest that settlers were looking into the agricultural opportunities that this district offered as early as the 2<sup>nd</sup> century BCE. Initially on a small scale, this occupation was conceivably a response to the demographic growth experienced by Antioch at that very time.<sup>9</sup> The character of this settlement was to remain basically unchanged for almost two centuries. Terraced orchards, vineyards, and possibly olive groves were the ideal forms of cultivation in this area, considering the general water and soil conditions of the district.

The picture of Hellenistic settlement in the Amanus Mountains, although consisting of no more than a scant number of sites, merits attention because of the peculiarities that it presents. One or possibly two urban foci date to the 3<sup>rd</sup> century BCE. The questions remain unresolved whether these foci functioned as independent towns and had their own charters, and what type of relationship they had with Antioch. AS 248, though obscured by the modern village of Bakras and an Ottoman caravanserai (see the Late Islamic section below), can be plausibly identified with the ancient town of Pagrae. This city was cited by Strabo (16.2.8) as being instrumental in controlling the traffic through the Amanus Mountains along the route that connected Antioch to Alexandria ad Issos (fig. 10). The ceramic finds, as well as various coins of the Seleucid and Ptolemaic kingdoms, agree with a Hellenistic foundation for the site. AS 273 to the north is a vast nucleation (350 x 400 m) in the vicinity of the modern village of Ceylanlı. The site is crowned by substantial Roman architectural remains, including a monumental necropolis and traces of an urban grid. Nevertheless, the pottery evidence indicates that the occupation at the site dwindled around the end of the 1<sup>st</sup> century BCE and ended by the mid-1<sup>st</sup> century CE. That this was the result of a new settlement further to the north, part of Roman Meleagrum, will be seen below.

<sup>8</sup> 91% of the Hellenistic sites recorded by the AVRPP witnessed occupation during the Roman period.

<sup>9</sup> The city especially flourished under the kingdom of Antiochus IV Epiphanes (175-163 BCE) (Downey 1961, 55-63).



## Discussion: the Hellenistic Period

In sum, a dispersed settlement pattern, site-hierarchy and the emergence of a web of small urban foci (Pagrae, and until 300 BCE Antigonía) are the most tangible trends as they appear in the archaeological record. The central Amuq plain drew most of the occupation dynamics during this era.

Although traumatic for the Seleucid state, the loss of Asia Minor in the aftermath of the battle of Magnesia (190 BCE) and that of Mesopotamia thereafter may be regarded as the prime factors for the rise to preeminence of Antioch's town and country in the 2<sup>nd</sup> c. BCE (Sève 2004). Now dominating a kingdom that consisted of northern Syria alone, the city, hitherto just one of the kingdom's capitals, drew settlers relocating from the lost Seleucid districts. The loss of Asia Minor, in particular, may have directed a flow of military units and veterans into Antioch's territory, thus significantly impacting the rural districts. The Seleucid policies of colonization are well known.<sup>10</sup> Institutionalized schemes allocated land to veterans from which it could extract taxation and thus feed the coffers of the Seleucid state. Moreover, this would effectively deploy discharged veterans in order to enhance control over sensitive areas (Bar-Kochva 1976). With the army constantly on the move, veteran settlement provided expedient means to exert control. Even though concrete evidence such as inscriptions is lacking, it is quite possible that the appearance of dense settlement in the central Amuq plain has to be associated with schemes of veteran settlement.

## THE ROMAN PERIOD (1<sup>ST</sup> CENTURY BCE-3<sup>RD</sup> CENTURY CE)

Andrea De Giorgi

For the Roman Period the AVRPP has been able to document with special clarity the continuity of settlement between the late Hellenistic and the Early Roman phases, together with a sharp increase of rural settlement. Continuity of settlement between the late Hellenistic and the Early Roman phases and the establishment of many new settlements are the most apparent trends. Of a total of 287 sites that were studied, 205 were inhabited in the Early Roman period; 35 % of these were pre-Roman foundations. The impact of the Roman administration on this landscape did not alter the pre-existing royal land systems, leaving the administrative configuration of this region intact. Independent villages and communities (*komai*) that had hitherto exploited this landscape experienced changes only at a purely fiscal level, with the introduction of the census and thus of a more systematic taxation system. What changed, however, was the city's preeminence. Major political and physical changes took place as early as the time of Julius Caesar, when Antioch was granted *libertas*, and a series of ambitious building programs was begun (Downey 1961, 154; Malalas 216.15-17). The AVRPP survey, in documenting the simultaneous emergence of new settlement in Antioch's rural districts at

<sup>10</sup> Sardis at the time of Antiochos III and the system of colonies that the city engendered is illuminating in this sense. See SEG 39.1289.

this time, shows that the growth of the city went hand in hand with that of the countryside (fig. 11). It also demonstrated the distinct emergence of lesser towns that were to figure prominently in the 1<sup>st</sup> and 2<sup>nd</sup> centuries CE and further into Late Antiquity, namely Gephyra (AS 297), Pagrae (AS 248),<sup>11</sup> Meleagrum (AS 273) and Imma (AS 345) (fig. 10). Growth of settlement was the hallmark of the region, and no breaks in the occupation can be detected in the archaeological record. The 3<sup>rd</sup> century CE (Duncan Jones 2004), with Sasanian raids and famines, did not produce visible alterations to the settlement schemes in the valley.

In the course of the survey it has become apparent that the expansion of the lake, along with flooding of the Orontes, Afrin and Kara Su rivers, shaped the responses of human agencies in the plain in antiquity (see the introduction). Overall settlement in the plain depended on two other factors as well: the fertility of the land, and access to the main arteries of traffic.

### **The southern area of the Amuq Valley and the Imma region**

Convenient access to the city was presumably the rationale behind the location of sites like AS 226, AS 229, AS 84 and especially AS 227, as they are situated halfway between the city and the valleys cutting through the Jebel al-Aqra.<sup>12</sup> The Antioch-Beroea-Chalcis route (fig. 10) that runs parallel to the left bank of the Orontes offered an additional opportunity for settlement and made this narrow but fertile district an attractive one. This important artery of traffic extended one of the urban thoroughfares to serve a network of routes all over Syria. Through its many manifestations, the continued all the way to the Euphrates frontier. A few stretches of this road survive in the research area; in the 1930's, Braidwood recorded that a portion of the route extended through the vicinity of Tell Keles (AS 124) in the eastern sector of the Amuq Valley (Braidwood 1937, 40; cf. Poidebard 1929, 22-29), while the AVRPP could trace a few surviving meters in the vicinity of site AS 202, near the Syrian border. At the town of Gephyra, modern Demirköprü (AS 297), a bridge was built perhaps shortly after the creation of Provincia Syria. At this time large contingents of troops were deployed from Antioch to various locations in southern Syria to deal with the continuous strife of the second half of the 1<sup>st</sup> century BCE. In these terms, the network of roads intersecting the plain and linking Antioch to the rest of Syria, along with riverine transport on the Orontes, was instrumental in integrating the different communities within this enlarged "suburban" system and providing access to urban markets. Thus a symbiotic relationship formed in which the rapid growth of the city was accompanied by the expansion of its hinterlands starting at the time of the *Pax Romana*. It sustained urban communities and military contingents alike by ensuring a constant supply of perishables and cereals to the capital. Libanius' description of the daily flow of farmers into the city of Antioch vividly depicts the terms of this town and country relationship (Lib. *Or.* 1.26).

<sup>11</sup> Possibly AS 246, see the discussion on Pagrae/Baghrās in the Early Islamic section.

<sup>12</sup> Figuring prominently in the Orontes basin is AS 227, modern Sultan Merkezi, a complex that included a heavily bulldozed monumental building on the mounded sector of the site and a beautifully preserved overshot watermill.

The southern area of the central Amuq Valley presents a number of sites oriented to the movement of traffic along the main road that thereby had easy access to Antioch and the rest of Syria (AS 203, 251, 122, 124, 202) follow this rationale. No material predating the Early Roman phase was present in these units, and they would thus be contemporary with the paved road. The sites in question, however, invariably represent very small occupations, perhaps small farms or simple seasonal encampments, with only a scant amount of fine wares, and a higher incidence of mortaria, amphorae, storage jars fragments and plain wares in general. Scanty ESA fragments datable to the early 1<sup>st</sup> century CE also support the chronology of these assemblages.

Two sites linked by a water infrastructure were recorded by the AVRPP along the road to Beorea and Chalcis, AS 202 and AS 345, ancient Imma (modern Yenışehir). The town of Imma owes its fame to the final battle between Aurelian and Zenobia in 274 CE (Downey 1950), a time when the town was embellished by large scale public buildings, at least judging by the size and quality of *spolia* that are embedded in various modern buildings. AS 202 is an above average-sized site measuring 300 x 150 m and is located on the eroded slopes of the limestone plateau. Although a concentration of ceramics and several rock-cut tombs were recorded by the AVRPP in the area, the feature that draws the most interest is a well preserved system of watermills, reservoirs and canals that lie to the immediate south of the settlement. The reservoir in nearby Imma, 300 m to the south of the town, fed a canal that ran across the plateau, brought water to a cistern and thence continued to the watermills located on the western slope of the plateau itself (cf. Casana and Wilkinson 2005a, fig. 2.30). Adjacent to the canal is AS 347, yielding a vast array of materials dating to the 1<sup>st</sup> and 2<sup>nd</sup> c. CE and plausibly related to Imma's enlargement at this time. It is likely that a small center like Imma stimulated new settlement in its environs by virtue of its favorable location on the northern fringes of the limestone plateaus and access to the main artery of traffic.

The settlement density of the district of Imma in the High Roman Empire is confirmed by occupation of the highland region south of the town in Syria, where several sites were investigated previously by Tchalenko (1953, 92). These include a temple dedicated to Zeus Bomos, and several cemeteries characterized by monumental shrines; especially noteworthy are several sarcophagi bearing Greek inscriptions that refer to wealthy 2<sup>nd</sup> century CE landowners with Roman, Semitic, Aramean and Greek names (Tchalenko 1953: 21-28). Tchalenko's data corroborate the picture of a region that became a new settlement focus in the 2<sup>nd</sup> century CE in response to environmental contingencies as well as economic stimuli provided by the city of Antioch. In particular, the expansion of the lake and its marshes apparently precluded new settlement in the plain and stimulated the occupation of the virtually hitherto unexploited highlands. The analysis of the Jebel al-Aqra below, however, will treat the issue in more detail.

### **The central Amuq Valley and the Afrin river**

Northeast of Antioch, one enters the most fertile and the most densely occupied area of the district, which consists of the Orontes alluvial fan located between the Orontes and the Afrin Rivers. Two main settlement patterns can be observed during the Roman

Period: (1) the installation of new farms between the late 1<sup>st</sup> c. BCE and the 1<sup>st</sup> c. CE, and (2) the consolidation of pre-existing units. Settlement in this area witnessed dense occupation in the early 1<sup>st</sup> c. CE, probably on account of the fertility of the land, and, importantly, the lesser susceptibility to floods than other parts of the valley floor. Most pre-existing sites survived the impact of new farms and estates. However, the territory that each community had at its disposal was reduced, while interstices of land hitherto left unexploited were occupied by new settlers. This scheme can clearly be seen at work within a discrete group of sites immediately east of the Orontes River. AS 249 and 138 are two small Hellenistic farmsteads that originally had access to a significant stretch of territory. At the beginning of the 1<sup>st</sup> century CE, three new farms were created: AS 139, 222 and 250. These significantly curtailed the land holdings of the previous farms that remained in operation. The abundance of diagnostic ESA at these sites points to mid-1<sup>st</sup> century CE occupations of the new sites. Interestingly, however, the location of AS 250 did not turn out to be a favorable one; Corona imagery and survey have revealed the presence of a sinuous canal reflecting one of the many fluctuations of the Orontes riverbed, which ultimately led to the burial of the site. The materials recovered from it cannot be dated later than the mid-1<sup>st</sup> century CE.

The Afrin river area witnessed dense settlement activity in the Early Roman Period. In particular, a branch of the river was diverted by means of a canal (2.5 km long) that served a series of villages and communities. Sites situated alongside the canal (AS 167, 168, 169, and 171) range between the mid-1<sup>st</sup> century BCE (based on ESA wares of Hayes' type 22), and the 2<sup>nd</sup> century CE (Eastern Sigillata B (ESB) fragments and later ESA forms, like Hayes' type 40) (fig. 12 shows Roman period ceramics from various Amuq sites). Although they measure under one hectare in area and are invariably situated on low hills or mounds overlooking the valley, these sites present an interesting spectrum of ceramics, that circulated in the Amuq Valley in limited quantities. Furthermore, AS 163, although obscured by a modern cemetery, had remains of monumental buildings consisting of column drums, ashlar blocks still in situ and a Doric capital. Heavily bulldozed and rather small in size (100 x 120 m), the site occupied a mound and presents a ceramic assemblage that begins with finds dating to the late 1<sup>st</sup> century BCE and that continue throughout the 1<sup>st</sup>-2<sup>nd</sup> century CE (various ESA forms: Hayes' types 26, 53, 65, as well as ESB: Hayes' type 18). Interestingly, no materials post-date the 2<sup>nd</sup> century CE, a date which may suggest the end of activities in this area since it is a phenomenon that applies to other sites as well.

While the canal served the purpose of increasing the volume of water carried by the northernmost (C) branch of the Afrin River, the middle (B) course of the same river remained active at the time of the Early Roman Empire, as the location of several sites indicates. In particular, sites AS 45, 46, 54, and 151 conform to the same patterns delineated above: that of small mounded sites, less than one hectare, that were occupied between the late 1<sup>st</sup> century BCE and the late 2<sup>nd</sup> century CE. While it is difficult to determine their character and topography, they do represent a settlement formula that was rooted in the Afrin Valley, consisting of small units that exploited ample parcels of land for cultivation.

The aggregate archaeological evidence suggests that, rather than dwindling on account of the impact of the Roman administration during the 1<sup>st</sup> century CE, the occupation seems to have grown even stronger. No signs of retrenchment were detected by the AVRPP; to the contrary, most sites were consolidated and their communities enlarged. AS 108, Üç Tepe, is the site that best exemplifies this phenomenon. A trilobate mound, the site accommodated a substantial community from the 3<sup>rd</sup> century BCE down into the Late Hellenistic era. On the basis of the archaeological data (early ESA bowls like Hayes' type 22a, Hayes' type 17 and 'thin wall' wares of Augustan date), it can be inferred that the northern lobe was first occupied in the 1<sup>st</sup> century CE, thus creating an extension to the previous nucleation. Later wares (ESA Hayes' types 54 and 65 among others) confirm the continued occupation of the site during the 2<sup>nd</sup> century CE.

### **The Amanus Mountains**

Semi-intensive pedestrian transects were conducted by the AVRPP in the Amanus Mountains in the seasons of 2001 and 2002. Occupation patterns can be summarized by three dominating trends: (1) in the valleys cutting through the Amanus Mountains; (2) on the Amanus piedmont, overlooking the Antioch-Germanicia-Nicopolis road; and (3) isolated high altitude sites, possible summer retreats.

In the Bakras area, first settled around the 1<sup>st</sup> c. CE and continuing into the Islamic era, sites display two location trends. They are either on the piedmont and oriented toward the plain, or they are in the passes that connect the Amuq plain to the Cilician coast. A site of considerable size, AS 246 (280 x 150 m), is located in the vicinity of the modern village of Belen on a limestone hill overlooking the road. The majority of the ceramics offer a wide spectrum of vessels and wares of the 1<sup>st</sup> and 2<sup>nd</sup> centuries CE (ESA cups Hayes' type 18 and Hayes' types 37a and 48). These same characteristics are shared by a group of smaller sites, AS 331, 245, and 244 respectively. Measuring an average of 50 m<sup>2</sup>, these units are among the smallest in the Amuq Valley and typify the settlement pattern that occurred on the lower slopes, with easy access to important routes and terraced land holdings for the maintenance of these communities.

The Kırıkhan valley, although cursorily examined, exhibits settlement trends that run counter to the patterns thus far delineated. Two sites out of the three identified in this valley, AS 336, likely a shrine, and AS 334, are situated at the considerable altitudes of 909 and 960 m above sea level, respectively. They occupy rocky plateaus above the elevation of olive cultivation, where the only vegetation consists of maquis and sporadic nut trees. Traces of terracing are prominent on these highlands and bespeak the tenacity of communities that carved pockets of land out of an extremely rocky terrain with just a few centimeters of topsoil. But there is more here than meets the eye. AS 334, Karacaoluk Yaylası, still exhibits a grid-like pattern to which various buildings conform, to the point that they can be virtually reconstructed. The ceramic assemblages are also noteworthy; while pottery of the early 2<sup>nd</sup> century BCE was found, the bulk of the ceramics dates to the 1<sup>st</sup> and 2<sup>nd</sup> centuries CE, with a good selection of ESA and ESB wares. If the presence of ESB sherds is surprising in itself, a fragment of Italian Sigillata (Dragendorff 16) raises questions about the nature of this specific settlement. Single pottery fragments of course

do not authorize substantial conclusions. In this case, however, it seems plausible that AS 334 did not fit the typical farmstead scheme; both the ceramics and the quality of the buildings suggest the presence of a possible seasonal retreat for use during the hottest months of the year.

The topographical/archaeological implications of the Ceylanlı Valley were amply discussed elsewhere (De Giorgi 2007) but some facts about this area need to be underscored. First, the emergence of a seemingly large new site AS 287 around the 1<sup>st</sup> c. BCE is noteworthy. Entirely obscured by the modern village of Ceylanlı, and plausibly identified with Meleagrum it gradually absorbed other communities located on the piedmont, such as AS 273, where the latest materials consist of ARS fragments of the 3<sup>rd</sup> century CE. Situated in the surroundings of AS 287 are a necropolis (AS 273) and a shrine (AS 272). Consisting of a scatter of sarcophagi and monumental tombs still visible in the 1930's, the necropolis is today attested by the rock-cut tombs of the so-called "Five Brothers". It is dated to the mid 2<sup>nd</sup> c. CE by an inscription that includes an imprecation (Chapot 1902). The complex of three chambers is topped by a rock carved relief representing five mantled figures.

### The Kara Su valley

The development of the Antioch-Nicopolis-Samosata road (fig. 10) was crucial for the development of settlement in the northern Amuq Plain. Elusively occupied in the Hellenistic Period, new settlement at the time of the Early Roman Empire was in all likelihood the result of the economic opportunities presented by an artery of heavy traffic traveled primarily by the military. The road was critical for the rapid deployment of Syrian legions in response to Parthian and Sasanian incursions. In this light, the installation at AS 190 of a small fort of approximately square plan, measuring 64x64 m, is fitting.<sup>13</sup> To be interpreted as a *castellum*, its presence must be connected with the nearby road. The annexation of Commagene under the Flavians is the *conditio sine qua non* for the implementation of these military logistics, and thus one can plausibly infer that the fortlet was part of the scheme. The archaeological record at the site indicates occupation that continues into the Late Roman and Early Islamic periods.

In more general terms, it must be underscored that the first classical period settlements in the Kara Su valley had appeared during the middle Hellenistic period. Boz Höyük (AS 4) on the floodplain was first occupied in the 2<sup>nd</sup> century BCE, measuring less than one hectare in area. Around this Hellenistic enclave a much larger community expanded over the site starting in the early 1<sup>st</sup> century CE and continued into the 2<sup>nd</sup> century. The pattern at Boz Höyük was replicated by two more sites on a prominent mound in the Kara Su flood plain, respectively AS 7 and 8, which revealed the same type of occupation continuum on a smaller scale. AS 8, near modern Arpalı, exhibited fragments of stone columns in addition to a typical scatter of tiles and sherds. These sites invariably display a tendency towards the reoccupation of mounds and higher ground

<sup>13</sup> Small of forts of this kind are frequent throughout the Roman Provinces of Syria and Arabia, where their connection with arteries of traffic is comparable to that at AS 190. The Trajanic forts along the Via Nova Trajana are emblematic in this sense. See Gregory 1997 and Kennedy & Riley 1990.



settlement, probably in response to the fluctuations of the course of the Kara Su River. Most sites east of the Kara Su exhibit a continuum of use that extends into the Late Roman period.

### The Jebel al-Aqra region

The affinities between the material culture and settlement dynamics of the Amuq region and those of the Syrian limestone *massifs* become more tangible once one enters the landscape of the Jebel al-Aqra and the limestone highlands southeast of Antioch (Butler 1929; Tchalenko 1953; Tate 1992). Here, settlement during the early 1<sup>st</sup> century CE was the result of a combination of emerging economic opportunities and institutional schemes for the discharge of veterans (De Giorgi 2007). On these dry, deeply eroded limestone hills, the archaeological survey unexpectedly recorded the highest site density. To account for the phenomenon two factors must be taken into consideration. First, systematic settlement in the area began in the late 1<sup>st</sup> century CE; previous occupation of this difficult terrain was slight (see above). Second, fragments of stone olive crushers and presses and were scattered in noteworthy quantities, suggesting the presence of an olive oil industry. The drought-like conditions of the Jebel al-Aqra, the westernmost extension of the system of the Syrian Jebels, were ideally suited for oleoculture (Callot 1984). Also, 58% of these sites, essentially farms and small villages, produced traces of mosaics. These emblems of status suggest that mosaics in the Antiochene were not designed exclusively for the splendid suburban villas in Daphne.

The exploitation of the hills for oleoculture was not confined to the Jebel al-Aqra alone; the same was documented by the French archaeologist George Tchalenko in the 1930's on the Syrian Jebels to the east (Tchalenko 1953). Environmental similarity, site density, occupation continuum and the presence of olive farms and at least four sanctuaries datable to the late 1<sup>st</sup> century BCE/early 1<sup>st</sup> century CE allow us to see the two areas as one cultural and economic region. In the case of the Jebel al-Aqra, it is likely that the restricted and yet remunerative economic opportunities offered by this landscape were seized by the veterans of the Syrian legions that were discharged in considerable numbers between the late 1<sup>st</sup> and early 2<sup>nd</sup> c. CE (De Giorgi 2007). This process, however, must be viewed in relation to the economic and environmental developments of the region at that time. In particular, the dense web of independent villages and farms in conjunction with the growth of the Amuq lake and its marshes, impaired further settlement in the plain.

Lest we produce an overly positive picture of provincial economy in the Jebel al-Aqra, two points must be underscored; first, the settlement on these hills reached its pinnacle by the 3<sup>rd</sup> c. CE and slowly decreased thereafter, which suggests that there was a finite limit over which the area could be exploited. The patchy nature of cultivable areas posed restraints to both the extension of estates and the developments of new units, hence the dissemination of small-scale holdings on this landscape. Second, while it can be argued that the agencies involved in the shaping of this territory were of Roman military extraction, the presence of a local, indigenous element cannot be discounted. In all likelihood this produced interactions between the two communities at both the levels of village life and economic ventures, especially in the management of the olive oil industry.

Various inscriptions from the Jebels (De Giorgi 2007) and also from other Syrian districts like the Hauran (MacAdam 2002) corroborate this hypothesis.

### Discussion: The Roman Period

In summary, the analysis of site distribution in these three different ecosystems, i.e. the Amuq Valley, the Amanus Mountains, and the Jebels, demonstrate a sharp increase of rural settlement during the first two centuries CE (fig. 11). This phenomenon went hand in hand with the physical growth of the city of Antioch and the city may have well produced the nucleations, villages and farms that were essential for its sustenance. This process, however, followed different trajectories in different parts of the research area. The survey data show that the rural expansion in the central Amuq Valley does not seem to have altered the preexisting Hellenistic configuration, an assumption based on the continuity and enlargement that most sites exhibit. Land tenancy systems and the holdings of independent villages and estates (*komai* and *epoikiai* respectively) presumably remained unchanged,<sup>14</sup> while the fertility and abundance of land resources encouraged settlement in the area for decades. New sites also plausibly replicated the administrative configuration of the previous settlement and thus created an infrastructure of Greek type with officials designated in various capacities. Libanius' references to the presence of *komarchoi* and *archons* are emblematic in this sense (McLean Harper 1938, 116-141).

More difficult is the identification of the agencies involved in the exploitation of small units of land; while the interpretation of the data from the Jebel al-Aqra assign a fundamental role to discharged veterans for the economic shaping of this region, no cogent hypothesis can be advanced for the rest of the valley. Nevertheless, the land crises of the 4<sup>th</sup> c. CE that are the outcome of alienation and accumulation of land in the hands of Antioch's aristocracy, suggests the possibility of a system of small landowners that cultivated and sold their crops to the city's markets (Liebeschuetz 1972, 61-73). Libanius' description of farmers commuting to and from the city, and often exploited by the civic authorities for the transport of bulky materials, strengthens this hypothesis (*Lib.* 1, 26).

The emergence of numerous sites in remote districts and hitherto unexploited lands of the Kara Su Valley and especially the Jebel al-Aqra, suggests that ease of access and fertility were not the only criteria that governed settlement. Environmental challenges, investment opportunities and commercial demands alike accounted for the emergence of a new matrix of sites with a thriving olive oil industry. These developments were not confined to the immediate vicinity of the city, but involved the entire eastern and southeastern Antiochene, initiating an urbanization process that would find its culmination in the Late Roman period.

The data suggest a continuity of rural settlement that was not affected by the crises and vicissitudes of the 3<sup>rd</sup> c. CE. Antioch's fall into disgrace under the Severans, Shapur's raids and Zenobia's *coup d'état* were events that, though traumatic, did not affect the economic mechanisms at work in the rural districts. In contrast, there appears to have

<sup>14</sup> This is of interest as it supports the view that upon the annexation of the Province of Syria, the Roman administration avoided confiscation and distribution of land and rather maintained the *status quo*; see F. Millar 1993.

been a consolidation of the highland settlement at this very time. Imma and its system of associated villages are particularly indicative in this sense. The impact of the military on this region also cannot be discounted. With the increase of war activity in the east, especially during the 2<sup>nd</sup> and 3<sup>rd</sup> c. CE, Antioch and its territory were key in the logistics and transfers of legions. The inauguration of the military harbor of Seleukia under the Flavians marked the beginning of a new era for Antioch, one in which the city, its markets and its rural districts benefited greatly from the presence of the legions and their formidable purchasing power.

#### THE LATE ROMAN PERIOD (4<sup>TH</sup> TO MID 7<sup>TH</sup> CENTURIES)

Andrea De Giorgi and Asa Eger

Preliminary research by the AVRPP assumed that by the Late Roman period,<sup>15</sup> settlement in the Amuq plain and surrounding foothills and uplands reached its height, with sites dotting every part of the landscape; a continuation and peak of the dispersal of settlement that began in the Hellenistic period. This was supported by a widespread phenomenon of urbanization spanning the fourth to sixth centuries CE (Duncan Jones 2004), epitomized by the spectacular villages on the north Syrian limestone hills (Biscop 1997; Tate 1992; Sodini et al. 1980; Tchalenko 1953-58; De Vogüé 1865-77), as well as several surveys carried out in nearby regions (Tate 1992). Further analysis, however, of the 287 sites investigated by AVRPP, shows that the percentage of occupied sites from the Early Roman to Late Roman periods drops from 72% to 47% by the fourth century CE (fig. 13). Further, only 3.5 % of the Late Roman sites consisted of new foundations. These figures take into consideration only sites with definite ceramic identifications, omitting more ambiguous coarsewares, handles, and bases. Including sites with indefinite Late Roman attribution brings the percentage only to around that of the Roman period. As such, the picture of expanded settlement on the limestone hills fails to illustrate certain discrepancies and accordingly, long term processes that led to the emergence of new economies and new shifts in occupation in the fourth century CE.

The AVRPP survey data can be used to demonstrate that the changing settlement landscape of in the Amuq Valley at this time was rooted in three main trends: (1) the consolidation of villages in the plain into fewer sites with strengthened occupation, and disappearance of several small Roman farms in the Orontes and Afrin valleys, (2) the expansion of settlement on the highlands and further expansion of oleoculture on the Jebels, and (3) the emergence of a web of lesser towns equipped with markets. To address these trends, first certain site categories will be presented including: rural plain sites (canal and river sites, route sites, and tell sites), upland sites, and urban centers, with a view to how the newly founded settlements fit into this continuous and dense landscape.

<sup>15</sup> The term Late Roman is used instead of Byzantine as a cultural designation, rather than a political period. This is because there is direct continuity both in terms of settlement patterns and material culture with the Roman period that is not easy to separate. Late Roman here refers to the conventional range of the Byzantine period (or early Byzantine fourth- mid seventh centuries), not to the chronological range sometimes attributed to the Late Roman period as an interstice between Roman and Byzantine (second-third centuries).

Second, the apparent reduction in the number of sites will be discussed in relation to transformations in Antioch's economic development in the Late Roman phase.

### **Rural sites in the plain**

Sites on the plain in the Late Roman period (fig. 13), both preexisting and newly founded, were predominately flat or low mounds. While their arrangement was seemingly scattershot, clear patterns can be discerned characterized by their location either along canals or rivers or routes around the plain. In some cases, where canals have not been detected, their presence can be extrapolated by their attendant sites. A linear pattern formed by Late Roman sites AS 87 and AS 223 and Early Islamic site AS 41 suggests that the canalized channel of the Afrin (Afrin A) bifurcated with a northern forked Afrin channel that drained into the lake. While both Late Roman sites were medium sized, their assemblages were among the largest in the plain. AS 87 exhibited a full range of Late Roman pottery that extended just into the seventh century but not beyond (fig. 14.1-14.7 shows Late Roman ceramics from various Amuq sites). Judging from the adjacent sites, the channel would have been in use in the Late Roman period at least until the early seventh century and probably into the Early Islamic. The channel eventually became completely inundated in the process of increased flooding and marsh expansion (see introduction). Two newly founded Late Roman sites (AS 42 and 51) were probably also associated with the same canal or one in close proximity draining off the Afrin A channel. A third newly founded site (AS 179) was located very close to the Afrin B channel. The site was abandoned by the end of the Late Roman period and replaced by a very significant Early Islamic new foundation, AS 257 (see below), suggesting a Late Roman/Early Islamic transition utilizing (or reutilizing) similar waterways. All of these newly founded sites were rather small in size with small assemblages. Settlements depended on canals and rivers not only for irrigation, but as natural field boundaries and transportation conduits, echoing Libanius' remarks of a subdivided landscape conveying produce to the city (Lib. *Or.* 11.260-262).

Route sites were equally important markers for newly founded sites. The largest *ex novo* Late Roman site (in terms of assemblage size) was AS 243. Its settlement in the fourth century replaced several smaller abandoned Hellenistic and Roman sites (AS 241 and 242), suggesting that this new settlement was a consolidation taking advantage of its prominent location on the Antioch-Nicopolis-Germanicia route out of the Amuq plain. Furthermore, the site was equidistant from both Antioch and Pagrae. Several other Late Roman small sites were newly founded (AS 217, AS 221, AS 128) near the Antioch-Chalcis-Beroea eastern route out of the plain.

While the overwhelming majority of Late Roman sites were sited off tells, a few tell sites did have occupation. Braidwood first noted this lack of major occupation on tells in his survey (Braidwood 1937: 46). These settlements were greatly reduced from the pre-Hellenistic occupational phases on the tells, as shown recently by intensive on and off-site survey at Tell Atchana (AS 136) which demonstrated a scant presence of Late Roman ceramics and roof tiles, suggesting that the settlement on the mound, was perhaps limited to "isolated farmsteads, buildings, or encampments" (Casana and Gansell 2005: 157, Casana

2003: 262).<sup>16</sup> At Tell Kurdu (AS 94) the presence of a countermarked coin of Heraclius and some roof tiles may tenuously indicate the presence of a farmhouse or military encampment in the first half of the seventh century (Vorderstrasse 2006). Re-evaluation of the 1930s Oriental Institute excavations on the plain revealed a small monastery atop Tell al-Judaidah (AS 176) and a small walled village on Çatal Höyük (AS 167).<sup>17</sup>

## Upland Sites

The picture of a reduction of Late Roman sites as compared with the Roman period changes when the uplands are included. Dispersal of Late Roman sites in the uplands was evident in several discrete areas that were surveyed including the three valleys and surrounding uplands in the Jebel al-Aqra and five areas along the Amanus including (from south to north) the Kisecik, Serinyol, Bakras-Belen, Kırıkhan, and Ceylanlı drainages and surrounding uplands (fig. 2). Numerous Late Roman sites were located both on the foothills and in the uplands in all of these areas. In the Kisecik valley and uplands, five sites were identified and all were occupied in the Late Roman period. The furthest one up the valley (AS 232) was a Late Roman foundation. These sites suggest that the extractive industries of the Kisecik mines exploited in the Roman period continued and even flourished in the Late Roman period. Late Roman fortified sites were also found in the uplands. In the mountains above Kırıkhan, AS 334 – high above olive and vine producing elevations – yielded Late Roman pottery. Although it was speculated above to have been an urbanite seasonal retreat, it might also have been associated with transhumant communities. Nearby Kale Tepe (AS 336) was a military fort or watchtower, comprising a square building (4 x 4 m) of large ashlar masonry with a perimeter wall. AS 238 (Serinyol Kalesi) along the Amanus between Antioch and Pagrae was a fortified square structure of stone with a vaulted roof measuring 9.3 x 9.3 m on a larger square platform measuring 30 x 34 m with a possible outer wall.

The Jebel al-Aqra was perhaps the most interesting area for the Late Roman period as it was during this time where settlement reached its peak and was the densest, with sites found all over the lowlands and uplands, slopes and hilltops. Three valleys in the Jebel al-Aqra were surveyed intensively to establish a model for upland and lowland settlement patterns (Casana 2003: 367-412). Virtually every site found was inhabited during the Late Roman period throughout the valleys and uplands. There were thirty-eight sites occupied. Of these, many had good assemblages with finewares (71%), corroborating the pattern seen in the Roman period when over 50% of these sites had

<sup>16</sup> Furthermore, a high density field scatter north of the mound may suggest either off-site scatter or off-site settlement at the base of the tell in the form of a lower town.

<sup>17</sup> The Tell al-Judaidah monastery consisted of a chapel, residential building with mosaic floor, and tombs, encircled by a wall with a cistern beyond the walls. The stone chapel comprised a rectangular nave paved with red brick and a small square sanctuary at its east end with a small room possibly for a tomb attached to the south wall of the nave. The church is comparable to many in the limestone massif and dates to the fifth or sixth centuries. The Çatal Höyük village was confined to the northeast end of the site with a wall separating it from the rest of the tell. It also had an attached cemetery of twelve graves. Unfortunately, the lack of pottery evidence made it difficult to reassess this site other than its designation generally as “Late Antique.” These excavations of the 1930s were reanalyzed by Tasha Vorderstrasse (2004: 91-94); for the original publications, see Haines (1971: 10-13, 31-34; pls, 49C, 62, 63B).

associated mosaics. The evidence suggests that these sites were perhaps more than isolated farms but included churches (possibly AS 275), villas, or large farmsteads, despite the fact that there were no main road, canal, or river networks or other strategic and economic considerations. This suggests a slightly different settlement pattern from the plain itself. The six largest sites with the heaviest assemblages were all previously inhabited in the Roman period and located in valleys or near the valley floors. As compared to the plain, the Jebel al-Aqra had a larger proportion of newly established sites (AS 300, 260, 295, 258). All of them were located on hilltops in the uplands. In addition, many were at the heads of the valleys, similar to AS 232 in Kisecik, showing the furthest extent of dispersal of upland settlement in the Late Roman period.

The chronology of these sites began as early as the early fourth century and by the mid fifth to mid sixth century the settlement reached its peak. While the majority of the Jebel al-Aqra sites did not go beyond the mid sixth century, some Late Roman sites on the plain had evidence of continuation into the early seventh and in some cases into the Early Islamic mid-late seventh century, as evidenced by the frequent presence of later Late Roman C forms (4, 10, 13) and transitional brittlewares.

### Urban Centers

Brevity of space necessitates that only a few comments should be made about Late Roman Antioch with regard to its changing status as a city in relation to its hinterland. Evidence for the reduction of the enclosed city in Antioch is found as early as the reign of Justinian (c. 560 CE) who reduced the “uselessly large wall” (Procop., *Buildings* 68). Antioch’s urban sprawl, noted by Libanius and Malalas as a city that constantly outgrew its borders, became greatly reduced in the Late Roman and Islamic Periods. Historians have argued that the reasons for this include a litany of natural disasters, catastrophes, invasions and plagues that befell the city in the sixth and seventh centuries (Foss 1997: 190; Kennedy 1985: 141-183, cf. n. 33). The beginning of the city’s transformation by the mid sixth century coincides with the reduction in the number of settlements and aggregate land use in the Amuq plain, the peak in upland sites, and the rise of self-sufficient minor towns. It was during this time that environmental changes, specifically erosion caused by intensive cultivation over the entire landscape and deforestation, brought about the permanence of the marshland. These environmental changes would have greatly affected Antioch, which was dependent on the Amuq plain for agricultural production, because the city itself was located in a narrow valley with very little immediate cultivatable land. As such, whatever the specific reasons, the “decline” of Antioch was part of a larger set of transformations that began to take place before the end of the Late Roman period.

One distinct characteristic of Late Roman settlement in the Amuq Valley during the Late Roman phase was the rise to prominence of its minor towns. Hellenistic and Early Roman foundations like Imma (AS 345) and Gephyra (AS 297), hitherto stations along the main routes, now acquired centrality on account of their location and the services that they offered to the surrounding countryside. Imma was not only one of the Antioch-Beroea route stations that were placed on the Peutinger map, but also acted as the portal to Antioch and the rest of Syria for the communities on the Jebel. In the fourth



century CE it became an important economic center. Theodoret of Cyrrhus' mention of a market at Imma in the mid fifth century is of importance (Theod. *HR.* 7. 1-3; see also De Ligt 1993: 73), as it shows us economic strategies that no longer depended on Antioch alone. Late Roman materials (fifth century CE African Red Slip and Phocaean Wares predominantly) were collected in two of the surveyed sectors, and many architectural fragments were noted including columns, capitals, architraves, cornices, lintels, and door frames. In situ remains include a Late Roman building (possibly a church) converted into a Middle Islamic fortification (see below), and a stepped podium-type structure in the city center. The fortification masonry contained many architectural fragments stripped from nearby ancient buildings that are now lost (Sinclair 1990: 295-6). While little can be said about the urban layout, some further information about the town during the Late Roman period can be extrapolated from an inscription hastily documented in 1999.<sup>18</sup>

[εἰς μνημόσυ]νον αἰώνιον ἔστω·  
 [ἐπὶ τοῦ ἀγί]ωτ(άτου) ἀρχιεπισκ<sup>ο</sup>(που) Φιλο-  
 [+ ξένου? - -]του ἐπενοήθη οὗτ(ος) †  
 [ὁ οἶκος, λει]τουργήσαντος  
 [- *nomen* - π]εριοδ(ευτοῦ). ἔτους Π . .

Line 1: *Let him be remembered forever.*

The formula “the righteous man will be remembered forever”, *Psalm* 111 (*Septuagint* numbering; 112 in some Bibles) resonates greatly in the text.

Line 2: *In the time of the holiest Archbishop Philoxenos (?).*

An Archbishop Philoxenos is attested to by an inscription at Salamis, which dates plausibly after AD 532. (Salamine de Chypre XIII, 206). *SEG* 20.125, in particular, informs Philoxenos' building activities at the Monastery of St. Barnaba, near Salamis. Although provoking, the hypothesis that the Philoxenos in the Imma's text and that in Cyprus are the same person is difficult to sustain. The latter, in fact, was probably an autocephalous ecclesiastic whose involvement in the Antioch's district must be ruled out. In all likelihood the authority responsible for the “conceiving” of Imma's House of Worship is a Philoxenos archbishop of Antioch, one of the five chief-bishops of the empire.

Lines 3-4: ... *This house of worship was conceived*

Lines 4-5: *While the officiating Ecclesiastical Visitor was [vacat]. Year 568/9 (?)*

Problematic in more than one way, the inscription suggests however that Imma, by means of its geographical position, was an integral part of the religious landscapes of both the adjacent Jebels and the communities settled in the plain. It thus argues against views of sacred landscapes exclusively relegated to the limestone hills of the Syrian Jebels. In this light, Jerome's mention of the hermit Malchus living in a village thirty miles east of Antioch is particularly evocative (Jerome, *Vita Malchi* 2-3). Several major sites around the town (AS 202 near the watermills discussed above, AS 347, and AS 205)

<sup>18</sup> Various attempts to locate the document for proper recording in the following years were fruitless. We would like to acknowledge, however, Paul Iversen and Kent Rigsby's thoughtful comments, which were essential in the reading of the text.

show that there was a concentration of settlement in the area in the Late Roman period. Although the watermills were of Roman construction by architectural parallels, the numerous finds of Late Roman pottery and few examples of Roman and Early Islamic pottery suggest they were in use throughout the Late Roman period and into the Early Islamic.

Little is known about Gephyra (AS 297) as it is obscured by the modern town of Demirköprü. The only remaining element of the ancient town is the bridge. The Roman bridge, spanning the Orontes River, has been used continuously until the present day, where it is located on the main thoroughfare through the city. This bridge would have been part of the main Antioch-Beroea route east and Antioch-Apamea route south out of the plain. In the Late Roman period, the town was surrounded by satellite sites radiating north of it towards the lake. These sites formed a similar complex of settlements around canal systems as seen at Imma.

### **Discussion: The Late Roman Period**

Although the Late Roman sites on the plain showed a reduction in the number of sites from the Early Roman period, a continuum of settlement patterns was maintained. Former Early Roman sites that continued consolidated into larger settlements. This echoed a similar process described for the Late Hellenistic and Early Roman periods and showed a gradual evolution of small scattered farms that either consolidated over time into larger settlements, or were abandoned in favor of upland settlements. Increased activity in the uplands reached a peak in the mid fifth to mid sixth centuries in the Jebel al-Aqra. Upland settlement in parts of the Syrian Jebels continued to see new foundations into the mid sixth to early seventh century (Magness 2003: 198).

One factor behind the Late Roman shift from plain to uplands must be sought in the particularly dynamic environment in the plain at the time. The steady growth of the lake and surrounding marshes during the Late Roman period must have played a major role in determining the changing economic strategies in the valley. It has been argued that the permanent growth of the lake and surrounding marshes, while gradual, occurred mostly at the end of the Late Roman period and into the Early Islamic period (Casana 2003: 64-65). This is based on several findings: the occurrence of Late Roman ceramics on beach ridges at the perimeter of the lake, canals built in the Late Roman period as described by the fourth century author Libanius and attested by the AVRPA data, and the erosion susceptibility created by upland settlement and cultivation. While this combination of evidence is compelling, it is reasonable to assume that seasonal inundations of the plain already contributed during the Late Roman period to the flooding of certain canals and settlements. Not only had upland settlement and cultivation and canal building in the plain been in full force already since the Roman period, but also is there evidence at the Arpalı pits near Ceylanlı (AS 287), and in the Bakras valley alluvial fans for gravel deposits covering Hellenistic through Late Roman architectural strata (Casana 2003: 75). Settlements that were abandoned in the plain in favor of upland locations could take advantage of the burgeoning olive oil and wine producing markets.

Next to environmental transformations, economic shifts also contributed to the pattern of upland sites and land use in the fifth and sixth centuries, mainly in the densely

settled limestone hills to the east of Antioch. Urban centers remained part of the network of key transportation nodes on the edges of the Amuq Valley. The towns changed, however, as they began to operate more independently by incorporating agricultural lands, gardens, canals, and watermills within the city walls, as well as satellite sites in a micro-regional system. The alleged self-sufficiency of Antioch's rural district in the fourth century CE (Liebeschuetz 1972: 60) may have been grounded in the economic opportunities and new markets that foci like Imma provided its surrounding sites. While this notion of self-sufficiency is problematic,<sup>19</sup> it is apparent that this historical phase witnessed important economic changes. The region's economic thrust was now situated on the limestone hills to the southeast of the city. The dense settlement in this region between the fourth and fifth centuries CE corroborates the picture (Foss 1997; Gatier 1994: 45). What needs to be emphasized is that by swinging toward the Jebels, Antioch's economic pendulum broke with the tradition of town *and* country that was a hallmark of the Hellenistic and Early Roman period.

Finally, the reduction of the number of villages and farms in the central Amuq Valley must be seen against the background of the expansion of larger estates that incorporated smaller holdings and often entire villages (Liebeschuetz 1972). These properties belonged essentially to urbanites of curial origin, the city's administrators and the wealthy landowning families that had also monopolized the city's markets. The absorption of land that previously belonged to villages and independent farms was a typical component of Late Roman landscapes by and large (Ruggini 1961: 23), and Antioch was no exception. Libanius' speeches, in particular, reflect this situation and inform us of these dynamics of change (Lib. 47, 4). This trend reverberates in the AVRП records, and becomes tangible in the consolidation and increase of larger sites. The particular incidence of African wares as well as later Phocian wares, provide the chronological framework for these processes. The data suggest that the economic strategies of urban and rural agencies that had shaped this valley for centuries were slowly superseded by schemes that resulted from the expansion of estates belonging to Antiochene families. It is in these terms that we can illustrate the difference between the Amuq Valley, exploited in ways that were the reflection of a minority's economic outlook, and the areas adjacent to the limestone hills, where lesser towns and villages began to provide the services that the capital could no longer accord.

This dichotomy, combined with the fragility of this eco-system, produced catastrophic effects when faced with crises. The food crisis of 362 CE (Garnsey 1988), of presumably small proportions but by no means different than other previous events of this kind,<sup>20</sup> demanded drastic remedies and brought into focus the endemic vulnerability of ancient economies, as well as the limits of a city where a minority owned most of the land and controlled the markets.

<sup>19</sup> It can be safely inferred that the Late Roman Jebels's economy, centered upon the production of olive oil, was rather integrated in far-flung commerce exchanges that had Constantinople as a main terminus. For a thorough discussion of this problem see Decker 2001.

<sup>20</sup> 46-47 CE, under Claudius. See Orosius *Hist.* 7.6.12.

THE EARLY ISLAMIC PERIOD (MID 7<sup>TH</sup> TO MID 10<sup>TH</sup> CENTURIES)

Asa Eger

The transition from the Late Roman to the Early Islamic period was marked by changes in settlement patterns in part as a response to environmental change (fig. 15). In the seventh century, the transition occurred unevenly with political changes manifesting themselves as the quickest and most visible, followed by economic reorientation, and lastly cultural transformation (and material cultural) evincing the most gradual response. It follows that settlement patterns and environmental change would likewise be gradual and not readily apparent. While this becomes true on a general level, there are distinguishing factors from one period to the other that are a result of varied responses to increasing environmental change. It will be proposed here that these may have been due to ethnic and cultural differences. As such, to differentiate the transition and chart settlement patterns and environmental change it is necessary to define certain criteria that enable an examination of sites with nuance and degree, rather than stating that the settlements were statically transitional (Late Roman-Early Islamic), or one or the other (Late Roman or Early Islamic). These criteria include arbitrary and multiple categories and subcategories of: (1) newly founded versus preexisting settlements; (2) chronology; (3) definite versus indefinite occupation (based upon known diagnostic ceramic evidence, see fig. 16); (4) site size (small: 1 ha and less; medium: 1.01 to 8 ha; large: over 8 ha); and (5) assemblage size (light: 1-2 sherds; moderate: 3-7 sherds; heavy: 8+ sherds). Such a model is inherently imperfect, but can be tested on the Amuq to examine its potential efficacy.

Settlement in the Early Islamic period did not have a direct continuity from the Late Roman period as shown by the number of sites occupied overall and by the number of newly established Early Islamic period sites (*ex novo*) as compared with Late Roman sites that continued into the Early Islamic (preexisting). For the number of sites overall, the Early Islamic period was significantly reduced by nearly half. In the Early Islamic period, 23% of sites (67 of 287) in the Amuq were definitely occupied as compared to 47% (136 of 287) in the Late Roman period. The picture changes little with the addition of indefinitely occupied sites (77% Late Roman, 46% Early Islamic). The lack of direct continuity between the Late Roman and Early Islamic is also reflected by the number of new versus preexisting sites. Although 9% (6 of 67) of the Early Islamic period sites occupied were newly founded and 72% were preexisting,<sup>21</sup> the preexisting sites only encompass 39% of definite Late Roman sites. In other words, more than half of the Late Roman sites did *not* continue into the Early Islamic period.

This differs from results from other surveys and excavations which show a more fluid continuity between the sixth-eighth centuries whether due to ceramic redating (for example, Magness 2003, 214) or indeterminate ceramic identification (for example, Avni 1996, 8). These interpretations compensated for earlier practices of supposing marked decline in settlement either at the end of the Late Roman period (with the arrival of the

<sup>21</sup> These percentages exclude the 'swing' category of definite Early Islamic sites with indefinite Late Roman occupation which could be attributed either way. Taking this category into consideration, Early Islamic *ex novo* sites would range between 9%-28% and preexisting sites would range between 72%-91%.

Muslims) or the end of the Roman period.<sup>22</sup> The method of analysis used here will allow for a division of sites and more reliable distinctions between Late Roman and Early Islamic settlement patterns. The same categories of Late Roman site types (canal and river sites, tell sites, route sites, upland sites, and urban centers) will be examined in view of how they remained the same, transformed, or gave rise to new site types.

### Canal, river and marsh sites

The largest and most important sites in terms of physical size and assemblage in the Early Islamic period were flat or low mounded sites along canal or river systems and in the expanding lake and marshlands. During the Late Roman-Early Islamic transition, the Afrin A canal (fig. 2, 15) continued to be used as evidenced by the aforementioned Late Roman sites and a newly established large Early Islamic site (AS 41, 25 ha) further away from the lake. The Afrin B canal flowed further north and bifurcated in two straightened canals, like the Afrin A canal, before emptying into the lake. Three large sites along the Afrin B canal, evenly spaced, were established *ex novo* and accordingly date the canal's construction and use to the Early Islamic period, beginning in the second half of the seventh to early eighth century. Two of these sites, including AS 257 – at 35 ha the largest Early Islamic site on the plain<sup>23</sup> – and AS 224 (6 ha), were spread out to either side of the canal as double sites, while the third site (AS 185, about 4.5 ha) was divided into two mounds on one side of the canal.<sup>24</sup> That great importance was placed on controlling water sources on the plain from the beginning of the Early Islamic period in the seventh-eighth century is evidenced by the establishment of four out of six new Early Islamic sites whose large size and 'heavy' assemblage size were pronounced by their central location on the Afrin canals. Furthermore, it demonstrates how such canals can be dated via their proximal sites.

The second major grouping consisted of three evenly spaced sites in the northern part of the plain along the banks of the Yaghrā river, no longer flowing today. These sites (AS 32, 29, and 25) averaged 12 ha, had 'heavy' assemblages, and were mainly preexisting settlements.<sup>25</sup> The Yaghrā river sites had larger assemblages both by comparison with their previous Roman and Late Roman occupations and with the Afrin

<sup>22</sup> In the Syrian Jebels we see an evolution in interpretations of the first settlements, from (1) they continued until the end of the Byzantine period (Tchalenko 1953-8), (2) they continued until the 10<sup>th</sup> century but in a state of decline (Sodini 1980; Tate 1992; Gatier 1994), (3) they already reached decline by the mid-sixth century due to natural disaster and plague (Kennedy 1985), (4) instead of decline, they stagnated in 'squalor' until the tenth century (Foss 1997), to (5) they continued from the Byzantine to Early Islamic period until the 10<sup>th</sup> century (Magness 2003).

<sup>23</sup> This does not include the known urban sites of Anṭākiya, Jisr Ḥadid (AS 297), and ʿImm (AS 345) which have continued as large sites until today and as such, modern development obscures their Early Islamic extent.

<sup>24</sup> The Yaghrā site AS 29 was similarly arranged as a double site. A parallel for double river sites occurs in the Balikh valley where the sites of BS 108, 109, and 110 on both sides of the Balikh river formed one site identified in texts and primarily dating to the ninth century (Bartl 1993/94: 36).

<sup>25</sup> AS 32 and 29 were founded in the Late Hellenistic or Early Roman while AS 25 had indefinite preexisting Late Roman occupation.

sites, even though the expansion of wetlands was more extensive for the Yaghrā river area rather than the Afrin canal area by the Early Islamic period (Casana 2003: 65).<sup>26</sup>

In both the Afrin channels and Yaghrā River, the site assemblages show a growth in physical size and assemblage from west to east, away from the spread of marsh. This is mirrored by a gradual chronological shift from predominately Late Roman and Early Islamic seventh centuries nearer to the lake to late Early Islamic and Middle Islamic tenth centuries further east<sup>27</sup> and by the eventual abandonment of the Afrin canal A in favor of canal B. While these shifts were to accommodate the expanding lake and the encroaching wetlands, the sites were not immediately abandoned in the Early Islamic period. Rather they had a fairly contemporaneous overlap with each other indicating that the sites were in or in close proximity to wetlands throughout much of their occupation. Some of these sites, such as AS 32 and AS 41 were certainly marsh sites, as was a seventh/eighth century site found in the Lake of Antioch (AS 180).<sup>28</sup> These marsh/canal sites were partially a response to the growth of marsh caused by advanced erosion sedimentation on the plain and subsequent flooding of the rivers and canals of the previous periods.

The marsh site as an Early Islamic phenomenon is supported by parallels in settlement patterns seen throughout the Islamic-Byzantine frontier (*al-thughūr* and *al-ʿawāṣim*) in regions such as Marʿash and Qinnasrīn (Whitcomb 2000, 2001), the Cilician Plain, and Raqqa/Raḥīqa (Meinecke 1991: 17-32).<sup>29</sup> Marshlands were important ecological niches for certain types of inhabitants, supporting a way of life characterized by mixed cultivation, reed gathering, and fishing (Pournelle 2003). Adaptation and settlement in marsh environments would have been familiar to the new settlers of the region, such as the Zuṭṭ and Sayābija who came with their families and water buffalo (*al-jamūs*) from the wetlands of southern Iraq. In replicating a similar lifestyle, they may have lived on islands or mounded settlements built up with reeds.<sup>30</sup> Such marsh settlements of reed and mudbrick are notoriously hard to discern in the archaeological record and so it is certainly possible that the gap between the number of Late Roman and

<sup>26</sup> The site of Yaghrā, known only in Middle Islamic sources as a village on a river of the same name should be one of the three Yaghrā River sites (Abu al-Fidā: 41-2). He described its population as Christian. The site has been identified with Muratpaşa (AS 25) partly on the basis of its size which is indeterminate but larger than the 12 ha sites of AS 32 and 29 and because it had the largest Middle Islamic assemblage and a Middle Islamic inscription. Yaghrā has also been incorrectly associated with the classical site of Meleagrum, mainly based on the corruption of the name although were virtually no Late Roman ceramics were discovered.

<sup>27</sup> This shift is further emphasized by AS 187, a large Roman site located south of AS 32 nearer to the lake, further downstream on the Yaghrā River. The absence of ceramics after the second century CE suggests that it was entirely submerged and left in favor of sites further upstream.

<sup>28</sup> A parallel for this lake/marsh site is found in the Jabbul plain east of Aleppo. Site JS 144 (Tell Wasta) was an island site on a rocky outcrop in the similar large marshy Jabbul Lake and dated to the Late Roman period (Schwartz et al. 2000: 453).

<sup>29</sup> The word *raqqa* in Arabic refers to marsh areas that form along rivers during seasonal flooding.

<sup>30</sup> Other textual sources from the Middle Islamic period for the Ghab and Amuq and ethnographic work describe marsh dwellers who lived in settlements such as these. For ethnographies: Weulersse 1940; Ainsworth 1842: I.36-9. For textual accounts: Abū al-Fida 41. Recent excavations in the lower town (south) of Tell Qarqur in the Ghab revealed an Early Islamic/Middle Islamic lower town that was not built up but could have been an example of island marsh settlement. The majority of the faunal evidence showed wetlands subsistence, while the pottery was mainly fourteenth century, corroborating Abū al-Fida's accounts. It is interesting to note that the tell itself was only slightly occupied and perhaps given over to agriculture and pasture (Casana, pers. comm.)



Early Islamic sites was smaller than it appears. Furthermore, marshes were prime areas for pasture (Str. 16.2.10).<sup>31</sup> Such a joint subsistence system would have certainly made use of the seasonal expansion and reduction of the marsh waters and the constantly renewed pastureland. This is important for large groups with herding animals or horses such as pastoralists or armies. During the Early Islamic period, the Amuq Plain in the *thughūr*/<sup>c</sup>*awāṣim* frontier zones was a central staging area and pasturage for summer transhumance (and raids) over the Taurus Mountains into Byzantine land.<sup>32</sup> The summer months would have been when the plain was driest. In the winter when the plain was fully inundated, pastoralists and armies remained and made use of it as a wet pasturage, particularly as the waters receded by early spring. Marsh settlement constituted a new form of adaptation to an increasing wetlands environment previously regarded as marginal.

### Fortified square enclosures (waystations)

The three small upland fortifications already discussed as part of the Late Roman settlement pattern showed no continuity with Early Islamic fortifications. Rather, in the Early Islamic period, upland sites for fortifications were eschewed for fortified square enclosures built on important land routes on the plain. At least one site was discernable as a square enclosure with fortified walls and towers. AS 190 at the north end of the Amuq plain was sited both for its strategic location, as it offers a long view north in the Islahiye-Kara Su valley and south to the Amuq plain (and guards the entrance), and for its location on the main north-south Antioch-Mar<sup>c</sup>ash road. The enclosure, measuring 70 x 70 m with preserved stone walls, corner towers, and rooms along the interior perimeter may have had an extramural settlement indicated by a rubble field of architectural fragments including basalt columns. The site was dated to the eighth-tenth centuries but had a few Roman and Late Roman sherds that may belong to an earlier phase of this site and/or another nearby site. This fortified square enclosure site type is similar to others found throughout the *thughūr* in the eighth-tenth centuries (mainly <sup>c</sup>Abbāsīd period) (Algaze, Breuninger and Knudstad 1994: 390-1, Algaze 1991: 395, fig. 124, Redford 1998: 17, fn. 74).<sup>33</sup> These structures all occupied important stopping points on north-south land routes connecting North Syria (*al*-<sup>c</sup>*awāṣim*) and Northern Mesopotamia (*al-jazīra*) with the *thughūr*. As frontier sites, they are small by comparison to the *thughūr* cities such as Ṭarsūs, al-Maṣṣīṣa, <sup>c</sup>Ayn Zarba, Kanīsa al-Sawdā, Ḥadath, and Malaṭiya. Nevertheless they seem to be part of an organized system of new Early Islamic waystations established in the late eighth to tenth centuries. Whether this was state-sponsored or the initiative of

<sup>31</sup> Strabo, writing in the early first century CE, specifically comments on the site of Apamea further up the Orontes in Syria almost completely encircled by the river and the utilization of part of the surrounding plain as horse and cattle pasturage side by side with the activities of marsh dwellers.

<sup>32</sup> Apocalyptic prophecies specifically allude to the meadows of the Amuq as a battle ground for one of the final battles (Madelung 1986: 174).

<sup>33</sup> New excavations in 2006 by Asa Eger and Andrea de Giorgi on the coast north of Kinet Höyük (on the route from Iskenderun into Cilicia that can be identified as Ḥiṣn al-Tīnāt) located a building, whose size is still undetermined, with an outer fortification wall with rooms along the interior and a tower dated to the ninth-tenth centuries with a possible earlier structure below dating to the eighth century.

local rulers is unclear at present. Such a question fits into the larger debate over the meaning of the “desert castles” in the Early Islamic period.

The frontier site of Būqā is the only Early Islamic unidentified site said to be located somewhere in the Amuq plain near the lake in the district of Anṭakīya. Ibn Khurradādhbih in the ninth century lists the place among the *ʿawāṣim* frontier sites (Ibn Khurradādhbih 65). Textual evidence suggests the site was occupied very early on during the Early Islamic conquests and possibly preexisting (Balādhurī *Futūḥ al-buldān* 229; Yāqūt *Muʿjam al-buldān* i.510, *Marāṣid al-Iṭṭilāʿ* i.231; Ibn Shaddād, *al-Aʿlāq al-khaṭīra* ii.422).<sup>34</sup> In 669-670 CE, Muʿawiya brought the aforementioned ‘Marsh Arabs’ and settled them at Būqā (Balādhurī 221, 230). That the site continued through the Early Islamic period is evident as it was taken in by the Byzantines in the reconquest between 948-9 CE. The tenth century map of Ibn Ḥawqal, while inaccurate and unproportional, indicates the site of Būqā on a road between Baghrās and Marʿash, suggesting that it perhaps is synonymous with the square enclosure of AS 190 described above. Yāqūt’s description further states that the site was located in *al-ṣaʿīd* and was a *ḥiṣn*. The term *al-ṣaʿīd*, while conventionally translated as uplands, may refer to the upper part of the Amuq plain and Kara Su course. This is appropriate given the fact that Būqā was settled by marsh dwellers who did not live in uplands. Furthermore, it also strengthens the identification of Būqā with AS 190 which was located upstream on the Kara Su valley of the Amuq plain.

### Route sites

In the seventh and early eighth century, several large preexisting sites (such as AS 122) with heavy assemblages interspersed along the Antioch-Beroea road continued and perhaps increased while some smaller Late Roman sites were abandoned (AS 217, 221) and perhaps consolidated. In the eighth century, many smaller sites (such as AS 128) of light to medium size and light to medium assemblages began filling in the spaces between these and the urban towns of Gephyra and Imma along the road. Small sites between the Orontes and Afrin river basins also appeared only in the eighth century, probably associated with canals and marsh. These smaller eighth century sites indicate a minor growth of settlement in the second phase of the Early Islamic period following the transition and initial settlements.

### Tell sites

While the majority of tell sites had no evidence of Early Islamic occupation (including Çatal Höyük, Tell al-Judaidah, and Tell Atchana), several tell sites did. Of the definite Early Islamic sites 12% were tell sites. All of these had light to moderate Early Islamic assemblages. At three of the sites (AS 253, 35, 91) pottery came from the base of the tell in what was perceived as a lower town. Thus, tell occupation during the Early Islamic period was few and far between as Early Islamic settlements followed the Roman-Late Roman pattern of dispersed, non-tell-based sites and lower towns. The majority of

<sup>34</sup> A fort (*ḥiṣn*) at Būqā was built and then refortified and repaired under the caliph Hishām at the same time as Baghrās.

tells and land on top of them may have been given over to farming or pasturing with small attendant settlements, much like today.

### Upland sites

In the Early Islamic period there were, by contrast to the Late Roman period, very few upland sites. Of the five Late Roman sites in the Kisecik valley, only AS 232, in the immediate vicinity of copper, gold, and steatite mines, continued to be occupied (Casana 2003: 267). AS 246 was a medium sized upland site and a major heavy assemblage site. It clearly guarded the road through the Belen pass. In the Jebel al-Aqra, the amount of sites that continued was reduced by two-thirds: thirteen sites in the Early Islamic period. However, more than half of these sites only bore slight continuity into the late seventh century and thus could be seen as Late Roman sites with extended occupations. The sites were for the most part located on the valley floors or on nearby low slopes. An exception was AS 275 located on a hilltop overlooking the Kozluca Valley. It may have been a Late Roman settlement that continued to be occupied, based on its continuity and location. That there were only three hilltop sites in the Early Islamic period is not an indication, however, that settlement patterns during this time reverted to the patterns of lowland nucleated settlement centers seen in the Bronze and Iron Ages (Casana 2007: 209). Early Islamic settlement avoided the Jebel al-Aqra as a whole in favor of centralized canal, river, and marsh locations. This is an important contrast, particularly due to the fact that much of the plain was given over to permanent and seasonal wetlands. Those upland sites that were occupied may have been continued from the Late Roman period or fulfilled special functions such as the Kisecik mining site.

### Urban Centers

The Late Roman network of urban centers and towns located around the edges of the plain, continued through the Early and Middle Islamic periods. By the Early Islamic period, Antioch (Anṭākiya) was further reduced from its Late Roman extent and became secondary in importance to the provincial capital city of Beroea (Halab, Aleppo), which was for a time the capital (*qaṣaba*) of the *ʿawāṣim* province. The process of reduction seen in the Late Roman period coupled with the departure of many Byzantines from the city at the time of the Early Islamic conquest in 635 CE would have significantly changed the face of Antioch. Early Islamic textual sources referring to agricultural lands forming a buffer around a reduced urban core combined with the archaeological remains of watermills at Sultan Merkezi describes a greatly transformed, more self-sufficient, smaller town in the Early Islamic period rather than the Roman ‘parasite’ city that received all of its goods and trade from the hinterlands (Yener & Wilkinson 1998/99).<sup>35</sup>

<sup>35</sup> The mills at Sultan Merkezi (AS 227) outside the city are very well preserved and dated in two phases to the Late Roman/Early Islamic and Ottoman Periods. Ibn Ḥawqal (165) speaks of cultivated fields (*mazāriʿ*), pasturages (*marāʿ*), trees (*ashjār*), and mills (*ārhīya*) within the city walls contributing to an overall comfortable self-sufficiency (*wa mā yastaqallā bihi āhlihā min marāfiḥiqiha*).

At Imma (ʿImm), surveys in and around the town itself (AS 344 and 345) found many transitional seventh, seventh-eighth, and eighth-tenth century ceramics and architecture specifically at the *kale* (see above) and city center sectors and the city walls, 200 m to the north. The network of Imma, its satellite sites and canal systems grew in the Early Islamic period. The predominately Early Islamic site of AS 204 attests to this transformation and the continued use of the canal system. By the end of the Early Islamic period (and into the eleventh century), textual sources corroborate the archaeological evidence, indicating that Imma was a Christian town level with the former urban metropolis of Antioch in a more equal and reduced hierarchical status.

In the Early Islamic period, Pagrae (Baghrās) guarded both the east-west Antioch-Alexandretta (al-Iskandaruna) route and the north-south Antioch-Marʿash routes in the *thughūr* (fig. 10, 15). However, survey in the area of the castle (AS 247) revealed no Early Islamic presence.<sup>36</sup> Rather, the Early Islamic site of Pagrae should probably be identified lowland site (AS 248) situated at the foot of the Belen pass. This is supported by the Islamic sources that describe the site of Pagrae as a town (*madīna*) at the foot of the Amanus Mountains (*liḥf jabal al-lukām*) (Yāqūt, *Marāṣid* i.209). Early Islamic material was found under the remains of the Late Islamic khan at the northern end of the large Roman and Late Roman site. This suggests that the Early Islamic occupation may then have been reduced from the 3 ha classical site (Casana 2003: 308) or it may have been founded peripheral to the site. While this identification is convincing, it raises a question as to the identification of the nearby site of Çakallı Karakol (AS 246) situated on a hill north of AS 248. AS 246 was also a major site guarding the Belen pass and situated near the old Belen pass road. The site was not only physically larger (4.2 ha), but it had larger ceramic assemblages from the Hellenistic-Middle Islamic periods than AS 248. Both of these sites attest to the importance of a continuing urban and unfortified presence along the routes leading either north or west to the Byzantine frontier.

### Discussion: The Early Islamic Period

By the Early Islamic period, only about half the number of sites occupied in the Late Roman period continued, a pattern seen in other surveys in the region (Algaze, Breuninger and Knudstad 1994, Wilkinson 1990). Early Islamic settlement followed the same pattern as Roman and Late Roman sites of low, flat, non-tell based and dispersed sites. Additionally canal and river sites and route sites remained important loci for new settlement, while tell sites were continuously avoided. Early Islamic settlement patterns contrasted from former Late Roman ones in that they eschewed upland settlement in favor of the increasingly inundated marshy plain. Besides the known urban sites, the most important unidentified sites on the plain in the Early Islamic period were the mainly preexisting sites along the Yaghrā river and the newly founded sites on the Afrin Canal B, all in or on the edges of marshlands. These sites, as yet unidentified, probably constituted

<sup>36</sup> Despite the fact that the fort is mentioned by numerous authors: Balādhurī (*Futūḥ al-buldān* 228) and Yāqūt (*Muʿjam al-buldān* i.427 from Balādhurī) state that the Umayyad caliph Hishām established a garrison and built a fort (*ḥiṣn*). Ibn Ḥawqal (169) mentions that the fort had a *minbar*. Zubaydah, the wife of Hārūn al-Rashīd and patron of the Darb Zubaydah, founded a hospice (*dār ḍiyāfa*) beside the fort that was referred to (perplexingly) as the only one of its type in Syria.

consolidated towns or large villages, a continuity of the Byzantine *kômai megalai* or *metrokômai* (Gatier 1994: 27). Fortified upland sites, seen in the Late Roman period, were also not part of the Early Islamic pattern of settlement, but occurred later, during the subsequent centuries of the Middle Islamic period. Rather, a system of fortified square enclosures or waystations was part of a new Early Islamic settlement system on the *thughūr* frontier.

An examination of the sites using various criteria such as physical size, assemblage size, preexisting or newly established settlement, chronology, and definite or indefinite occupation has added levels of variance and degree to Late Roman and Early Islamic settlement. This nuance can be used to develop hypothetical ethno-cultural inferences of population and demography in both a transitional period and culturally mixed frontier zone. What can be suggested is that Muslim settlement in canals and marshes were sited to control water rights and utilize the broad range of wetlands resources, perhaps a result of the influx of marsh dwellers, just as waystation sites controlled frontier movement. Late Roman settlements that increased significantly in the Early Islamic period (urban centers and the Yaghrā river sites) may suggest mixed ethnic and religious Muslim and Christian communities resulting from incoming Muslims adding to a community of already present Christians. By contrast, scattered Late Roman sites that were reduced by the Early Islamic period on the plain or that showed some continuity in the uplands may represent Christian communities. These shifts in settlement patterns do not indicate general abandonment, decline, or a level of “squalor” in the Early Islamic period or by the mid-fifth century as argued by historians and archaeologists alike, but show new changes in settlement as well as patterns of continuity.

#### THE MIDDLE ISLAMIC PERIOD (10<sup>TH</sup> TO 14<sup>TH</sup> CENTURY)

Tasha Vorderstrasse and Asa Eger

The term “Middle Islamic”, used here in an archaeological sense, is historically speaking a misnomer when applied to the Amuq Plain.<sup>37</sup> One reason for this is that the Amuq Valley and the city of Antioch were under political control of the Byzantines and the Franks in the period that one might term Middle Islamic. It is only for a short period that the Seljuks (1084-1098/1099) reigned in the area before they were swept away by the invading Franks. Culturally, however, the region has much in common with areas that were under Muslim control, in both historical periods. The material culture of the Middle Byzantine period shows very little sign of Byzantine influence, and although the Frankish principality developed certain types of pottery that were distinctive, they were largely free of any western influence and are very similar to types found in the Kingdom of Cilician Armenia and Ayyubid/Mamluk Syria (Vorderstrasse 2005c). Only coin types, as the official outlet of the government, are distinctly Byzantine or Frankish (see discussions in Vorderstrasse 2005a: 93-95, 113-118).

<sup>37</sup> Other terms, such as “medieval” could also be used in this context, but Middle Islamic is preferred because the material culture of the region is seen as being largely Islamic in nature.

The assessment of the settlement history in this period is based upon an overall study of the survey pottery by Asa Eger and by a detailed study of selections of the pottery in 2002 and 2006 by Tasha Vorderstrasse. Since the study of the pottery is continuing, this and the following section on Late Islamic period settlement are preliminary and may change once all of the sites have been examined thoroughly. Currently, based on the combined studies of Eger and Vorderstrasse, 44% of the sites surveyed have been identified as having Middle Islamic occupation showing a considerable degree of discontinuity from the Early Islamic to the Middle Islamic period (fig. 17). About 47% of the sites occupied in the Early Islamic period were occupied in the Middle Islamic, which means that about half of the sites were abandoned by the mid-tenth century. Meanwhile, new settlements can be found at sites which had no evidence of Early Islamic occupation. The majority of Middle Islamic settlements occupied in the Amuq occurred between the late eleventh to early fourteenth centuries. As such, settlement patterns in the Middle Islamic period can be separated into two phases, the poorly settled mid tenth to mid eleventh centuries (or Middle Byzantine phase) followed by the late eleventh to early fourteenth centuries (or Frankish phase).

### **The 10<sup>th</sup>-11<sup>th</sup> centuries (The Middle Byzantine phase)**

The century immediately following the Byzantine reconquests is archaeologically very poorly represented in the region and appears to have been a period of decline. As previously stated, by the tenth century, the majority of small and dispersed upland sites in the Jebel al-Aqra and Syrian Jebels were abandoned. However, the evidence from both material culture and historical sources presents a more complicated scenario. As such, it is open for discussion whether there was a period of serious settlement decline at beginning of the Middle Islamic period, from the mid 10<sup>th</sup> to the mid 11<sup>th</sup> century.

The knowledge of the ceramic traditions of this period is unequally divided over relatively well-known glazed wares and poorly understood unglazed wares. This introduces a bias into the reconstruction of settlement patterns, with (rural) settlements with low percentages of glazed wares being more difficult to recognize and date accurately. Some types of glazed wares, such as splashed ware sgraffiato, can be dated to this subphase of the Middle Islamic period, perhaps to be equated with the period of Byzantine re-occupation of the Amuq (969-1084 CE) (fig. 18). This is a development of splash ware pottery that was already present in the region in the Early Islamic period, demonstrating a continuity of local production (Vorderstrasse 2005a: 96-97). Middle Islamic period splashed ware with sgraffiato is likely to have been produced in the region (perhaps at Antioch) and used by residents of both inland and coastal sites such as al-Mina. It was not common, however, in the AVR P collections.

Historical and numismatic sources seem to point to a prosperous population with a highly monetized economy. It is ironic that in the earlier part of the Middle Islamic period, when our archaeological evidence about the region is rather coarse-grained, we have some of the most detailed descriptions of the area since Libanius and John Malalas. We owe these to Ibn Butlan, a Christian doctor who travelled to Antioch in the 10<sup>th</sup> century and eventually settled there. Even taking into account the fact that Ibn Butlan is clearly biased in favor of



Antioch, which appears to have been his favorite city, his work contains some valuable observations about Antioch's countryside (Le Strange 1890; Conrad 2001: 143, 150). According to Ibn Butlan, the land between Antioch and Aleppo was very fertile and populous, filled with villages, and without any ruins. More negatively, he holds that the town of Imma was full of prostitutes, pigs, and wine. Ibn Butlan also mentions an earthquake in the Amuq where many farms were flooded, new swamps emerged, and a large church and fortress were swallowed up and people fled to the hilltops (Conrad 2001: 143).

One could dismiss Ibn Butlan's description of a highly prosperous region as mere hyperbole, except that the numismatic evidence in the Amuq region appears to confirm his statements. The number of coins from this period found in the Çatal Höyük excavations was remarkably high, accounting for almost half the coins found there (Vorderstrasse 2005b). This could point either to a considerable degree of monetization in at least part of the plain or to the presence of a military garrison at Çatal Höyük (Vorderstrasse 2005b; Vorderstrasse forthcoming).<sup>38</sup>

However, the century or so of discontinuity is equally well attested in many historical sources independently as a period of general decentralization in the frontier region with the waning political and economic influence of a central government and large urban polities. During this century, the largest migration of nomadic and semi-nomadic Bedouin out of Arabia since the conquests arrived to the *thughūr* and *jazīra* (Cappel 1994). In the absence of central power, these groups rose as local independent tribal dynasties based around major towns and used the surrounding lands as pasture, effectively changing the balance of tribes that had largely become sedentary. The renomadization was noted throughout the region of northern Syria and Mesopotamia (Bartl 1996: 337; Tonghini 1998: 18, 71; Haase 1983: 75).

A transformation of the settled landscape of villages to a more transient landscape of camps is difficult to pinpoint in the heavily aggraded plains of this frontier region. But then again, it is precisely the accrued level of aggradation from irrigation systems which may have contributed to this settlement transformation, as demonstrated by increased marshification and the inevitable termination of major canal irrigation systems by the end of the Early Islamic period (Willkinson 1998: 82). The possibility of real decline is indicated by the low number of sites with confirmed occupation from this first phase of the Middle Islamic period, and is supported by attestations in the historical sources for a period of fragmentation and political instability.

### **The 11<sup>th</sup>-14<sup>th</sup> centuries (The Frankish phase)**

In the second Middle Islamic phase, there was a new peak in occupation, and settlements occurred across the Amuq plain. The densest areas were to the south and east of the lake of Antioch (fig. 17). The ceramic assemblages included several types of glazed pottery such as Port St. Symeon ware, Raqqa ware, and imported Byzantine pottery (fig.

<sup>38</sup> As the excavated medieval pottery from the site has yet to be located, however, it is not possible to assess the nature of the settlement in detail. The lack of pottery from the site means that we do not know the date of the latest, walled, phase (level 1) of Çatal Höyük. It could theoretically date any time from the end of the Roman period onwards.

18). Port St. Symeon ware was made in the region and is the most common glazed pottery type among the Middle Islamic period Amuq Valley sites. This is followed by Raqqa wares, which were probably imported from the east. No evidence yet exists that this type of pottery was made in the Frankish Principality of Antioch, although it is possible. The imported Byzantine pottery was presumably brought into the region through ports such as al-Mina, but was rare among the Amuq Valley survey collections. There was not the same degree of variation of pottery as one finds in the excavations of al-Mina, Kinet Höyük, and Antioch. Italian proto-maiolica was entirely absent (Vorderstrasse 2006: 333-335).

The later Middle Islamic period occupation in the Amuq Valley and surrounding uplands was represented by a variety of sites, including small field scatters that probably identify farm sites, larger villages, tell sites, and castles. Imma (AS 345) was one of the sites where splashed ware sgraffiato pottery was found, indicating that settlement continued from the Early Islamic to the Middle Islamic period. It probably remained the main settlement in the eastern part of the Amuq Plain throughout the period. Sinclair believes that the church at Imma, which he interpreted as Late Roman, was fortified at some time during the Frankish period (Sinclair 1990: 295-296), when churches in the limestone hills were also fortified (Vorderstrasse 2005a: 110). An alternative possibility is that the fort replaced the church in the Frankish period and was not a fortified church at all.

The patterns of consolidation traced in the Late Roman and Early Islamic periods advanced even further where newer and dispersed settlements shifted from scattered farms toward conglomerate villages (some made up of groups of farms) and small towns, recombining a similar process of pre-Hellenistic nucleation with already dispersed sites in a new pattern of “nucleated dispersal”. In some cases the villages grew to the level of importance of the cities, advancing the pattern of equalization of cities and towns in the Late Roman and Early Islamic periods. Interestingly, Muqaddasī writes of the Amuq that: “in this region villages (*qurā*) are more splendid and larger than most of the cities (*mudun*)....” (Muqaddasī 155.1-5). Unlike the Early Islamic period, there were no discernable canal building projects. Agriculture was probably practiced in extremely localized fields around sites with a heavy emphasis on nomadic pastoralism. Industry, including ceramic and glass production, was also present. One such example of a conglomerate village was the town of Arṭāh (formerly Late Roman Artesia) a few km north of Imma in the Amuq, reinhabited in the Middle Islamic period. In the 13<sup>th</sup> century, Ibn Shaddād described a small town (*madīnatun ṣaghīratun*) that possessed gardens (*basātīn*), springs (*‘uyūn*), mills (*arḥā*),<sup>39</sup> as well as villages (*qurā*) (Ibn Shaddād 423). The four villages making up the town are named and include Tell al-Judaidah (AS 176). These various rather insubstantial sites likely depended on (and even comprised) Arṭāh (Jacquot 1931: 442).

Another noticeable characteristic was a return to occupying large multi-period tells, which were formerly occupied until the Hellenistic period. AS 28, near the Yaghrā river was an example of this pattern. The site had Late Hellenistic and Middle Islamic but no Roman through Early Islamic occupation. The tell sites were often small, similar to the

<sup>39</sup> In 2005, the AVR P survey confirmed numerous fragments of mills and other architectural remains in the gardens of modern houses.

few Late Roman and Early Islamic scanty occupations of tells as shown by the excavated settlement of the Islamic period at Çatal Höyük which was restricted to only one part of the multi-period mound. Often villages would incorporate tells as a defensible high point, which was walled and offered refuge for villagers and their livestock. Although the investigation of the post-Early Islamic settlement in the Amuq is hampered by the fact that many modern villages are built over the Middle Islamic sites, the differences separating the Early Islamic patterns from the Middle Islamic and modern-day continuities are evident. The protective potential of these sites is emphasized rather than their military nature by virtue that many are found in the plain near villages and towns and not exclusively along a borderline (Glick 1995: 17-18).

Newly founded sites tended to be fortified upland castles constructed in this period. During this period, several important forts were constructed and occupied by Byzantines, Muslims, Crusaders, and Armenians such as Baghrās and Darbassāk. The castle of Baghrās (AS 247) was known historically as a major site guarding the Belen pass. It was built in the tenth century although its construction has been noted as primarily Crusader with possibly later Mamlūk or Armenian additions (Edwards 1983: 415, 418-419; Sinclair 1990: 266-271). Along with the presence of the Middle Islamic upland castle, the Late Roman and Early Islamic lowland site continued to be occupied. Ibn Ḥawqal (169) and Idrisi (656), writing in the tenth and early twelfth centuries respectively, mentioned Ḥiṣn Baghrās and included a Friday Mosque (*masjid jāmiʿ*) and large population. The castle was expanded in the Middle Byzantine period before entering the zenith of its occupation, the Frankish period. After the Mamluk conquest in 1268 the fortress became a border point between the Mamluks and the Cilician Armenians (Lawrence 1978: 39-46; Edwards 1983: 416-418). Although a complete surface survey could not be accurately done within the well-preserved and precariously situated castle, Early and Middle Islamic transitional tenth and eleventh century pottery was found including molded buffware and colorsplash sgraffiato sherds, suggesting a presence (rather than dating the construction) in the tenth century and a move to an upland occupation from the lowland town. The types and variety of pottery found at Baghrās including numerous Port St. Symeon wares (as compared to other sites) and imported Byzantine sgraffiato pottery, demonstrate that it continued as an important site. At the lower town on the plain (AS 248), pottery of the Early, Middle, and Late Islamic periods further suggests certain continuity. Abū al-Fidāʾ in the fourteenth century described springs, gardens, and fields all around the site (Abū al-Fidāʾ 259). It is not altogether clear whether he was referring to the castle or the lower town. Several architectural features were discerned just below the castle on the slopes including a bathhouse and gate associated with twelfth-fourteenth century Middle Islamic pottery. Watermills found in the vicinity of the khan show that the area was still being used and perhaps relatively self-sufficient. This is an important point as it shows that construction of the castle was not at the expense of the lower town, but rather part of an overall complex that added a level of defense and refuge for the lower town dwellers.

The nearby site of Darbassāk (or Darbsāk, classical Trapezon, Crusader Trapesac, modern Turkish Terbezek, AS 346/Beyazid-i Bestami), further north along the Amanus range and near the site of Celanlı, is quite similar to Baghrās. It is likely that this site also

included a large castle, a mosque and gardens (Abū al-Fidā' 261). Darbassāk was also built in the Crusader Period and refortified by the Armenians (Edwards 1983: 253). Measurements and collection were difficult as the site today is covered over by a heavily visited modern pilgrimage shrine complex (*türbe*), but Middle Islamic pottery was apparent on the surface and also noted by Sinclair (1990: 297). Another important upland site was Cakallı Karakol (AS 246), which featured the largest Middle Islamic assemblage of ceramics found on the survey including Raqqa pottery, cooking pots, Byzantine imported sgraffiato pottery and Port St. Symeon ware.

It would seem that these combinations of lower towns with tells or mountain fortified settlements, were of a single type, self-sufficient to a point, and, in effect, were part of a contemporary process known pervasively in the western Mediterranean as *incastellamento*. Within the literature of the Islamic geographers, the prominence given to these sites is interesting. Many of these authors lived at the end of the ʿAbbāsid period when the frontier changed hands frequently from Byzantine to Crusader to Muslim and defensible towns and castles were built. In the Middle Islamic Period, many previously Roman/Late Roman sites were mentioned in texts as Islamic forts (*ḥuṣūn* sing. *ḥiṣn*), such as Baghrās and Darbassāk, due to their strategic location on the frontier as transportation nodes along military or trade routes. However, it is important to note that textual descriptions of sites, particularly in the *thughūr*, often referred to towns as *ḥiṣn*, such as Ḥiṣn ʿImm (Imma). As such the ambiguous meaning of the term as a fortified frontier site in the most general sense suggests that during this period towns and villages were either fortified themselves, or included a fortified element such as a fort, tell, or castle.

### Discussion: The Middle Islamic Period

Whereas the ceramic assemblages suggest a decline in the number of settlements with the transition from the Early to Middle Islamic period, there was an increase in settlement in the later part of the Middle Islamic period (perhaps to be equated with the period of Frankish rule). Similar developments can be seen in other regions. Surveys in the Balikh Valley (Bartl 1996: 335), the Qoueiq Valley (Bernus-Taylor 1980: 473; Vorderstrasse in preparation), and the North Jazira area (Wilkinson and Tucker 1995: 71) see a decline in the 11<sup>th</sup> century, and an upturn in the 12<sup>th</sup> and 13<sup>th</sup> centuries. In the Lower Karababa Basin Survey, the increase in settlement begins in the 11<sup>th</sup> and 12<sup>th</sup> centuries (Wilkinson 1990: 129). A new wave of nomadic tribes came between the Early and Middle Islamic periods (mid tenth-mid eleventh) leaving a century of many abandoned sites and no new sedentary communities. However, by the Middle Islamic period (mid 11<sup>th</sup>) settlement and demography had reached a second peak, where settled (and probably ethnically mixed) communities had agglomerated into towns with upland fortifications, the process of *incastellamento*. The reasons are due to a combination of a politically and economically unstable landscape, and adaptive strategies to changing environmental and economic (resource) conditions. These show a shift to subsistence strategies that were more immediate and protected, differing greatly from the large scale economic entrepreneurial markets of the Roman and Late Roman periods or the continuing extensive maintenance of irrigation networks in the Early Islamic periods.

## THE LATE ISLAMIC PERIOD (14<sup>TH</sup> TO 19<sup>TH</sup> CENTURY)

Tasha Vorderstrasse

The Late Islamic period in the Amuq Plain is the period when the region was under the sway of the Mamluks and the Ottomans. It is a period when the region is generally seen as going into serious decline. The city of Antioch was said to have been largely destroyed by the Mamluks, and countless travelers spoke about how much reduced it was from its former self. The Arab writers of the time, such as Ibn Battuta, however, speak of a prosperous city (although it lacked walls) (Vorderstrasse 2005a: 136-137). Nevertheless, it is evident that there was a significant downturn in settlement in the region when compared with the Frankish period. Of all sites, 15% can be identified as certainly Late Islamic in date, which is a drop of almost two thirds from the 125 sites of the previous period. Only a small number of artifacts can definitely be attributed to this period and the majority of them date to the later part of the period. The question is whether or not this is a true reflection of the settlement in this period. Our understanding of unglazed pottery in this period is limited, and as a result, we could be underestimating the number of settlements. It is unfortunate that no Mamluk or Ottoman excavations in the region have been published to shed more light on unglazed pottery typologies.

The period can be divided into two phases: Late Islamic I (14<sup>th</sup>-16<sup>th</sup> centuries, corresponding to the period of Mamluk control) and Late Islamic II (16<sup>th</sup>-19<sup>th</sup> centuries, i.e. the Ottoman period). In addition to archaeological materials, historical and hitherto barely studied historical geographical documents provide evidence about this period. The discussion of the Late Islamic period presents preliminary conclusions on the settlement dynamics, but primarily aims at presenting potential avenues of research.

### **The Late Islamic I period (14<sup>th</sup>-16<sup>th</sup> century)**

The Late Islamic I period can be equated to the Mamluk occupation of the Amuq Plain. The information for the region under the Mamluks is scanty. Only a few coins have been found in the area, and there is a distinct lack of pottery that can be definitely dated to this period. It is possible that recognition of pottery of this phase is hampered by the fact that Middle Islamic types continued to be produced after the Mamluk conquest of the Frankish territory. Port St. Symeon pottery, for example, has been found in post-1268 contexts in Lebanon, where the dating of the site is not in any doubt (Vorderstrasse in press). Therefore, the suggestion is possible that many of the sites discussed in the previous section continued to be inhabited, probably into the 14<sup>th</sup> century.

The site of Muratpaşa (AS 25) was occupied in this period, as demonstrated by (unpublished) inscriptions which point to activities of the Sultan İnāl (d.1461) in this area.

### **The Late Islamic II period (16<sup>th</sup>-19<sup>th</sup> century)**

The evidence for the Late Islamic II period, which can be equated with the Ottoman occupation of the region, is more extensive, particularly for the 19<sup>th</sup> century. The archaeological materials found are primarily late Ottoman and consists of pipes and

rouletted ware (fig. 18). This type of pottery, usually decorated with square or occasionally diamond rouletting is often found in association with 19<sup>th</sup> century pipes, which gives an associated date.<sup>40</sup> Only a few fine wares can be assigned to this period. Iznik and Kütahya wares are so far absent in the survey assemblages, and could have been out of reach of the average villager. At al-Mina, for example, the most common types of pottery that could be identified were monochrome glazed wares and 19<sup>th</sup> century Çannakale wares, which were relatively cheap at the time (Vorderstrasse 2005a: 148).

The majority of the Late Islamic settlements are small and scattered across the Amuq plain (fig. 19). There are a few places where one can observe clusters of sites, namely in the southern part of the plain and four sites in the north (AS 16, 210, 211, 215). In addition, there are several settlements which are located close to one another: AS 105 and 200 and AS 107 and 171. The overall impression is one of a limited number of small settlements. In Ottoman Cyprus, Given observed the importance of water sources for the placement of settlement as many villages were located alongside rivers. In addition, security and the presence of arable land was also important (Given 2000: 215). In the Amuq, however, this pattern cannot be observed as the majority of villages were not located along rivers.

The castle of Baghrās (AS 247), so important in the Middle Islamic period, may have seen a period of decline in the 14<sup>th</sup> century (Lawrence 1978: 47), although this is debated (Sinclair 1990: 266). During the Ottoman period the castle experienced more activity. There is some evidence from the castle itself that points to Ottoman occupation, but the vast bulk comes from Baghrās khan (AS 248), where the survey indicates that there was an increase in occupation from the Middle to the Late Islamic period. The foundation and part of the structure are still standing and CORONA satellite imagery showed a clear rectilinear structure. The khan can be identified with Khan Karamurt which Sinclair (1990: 350) states was erected on orders of the Ottoman vizier Hasan Paşa after 1704. However his inscription implies that the khan was part of a larger town. There were also buildings that included a castle, mosque, double hammam for men and women, Koran school, imaret (canteen), shops, houses for the castle garrison and mosque attendants, and a bridge nearby. The khan was apparently built to control bandit activity on the Amanus and records state that it was finished by 1729 (and repaired then). Above the southern entrance were rooms, indicating a two story structure, and barley and hay stores. A late 19<sup>th</sup> century traveler noted that the castle was 100 m from the khan. This is too close to match the distance with the preserved Baghrās Castle and may correspond with the architectural features (bathhouse and gate) observed by AVRPA on the slopes below the castle, suggesting a continuous landscape of khan on the plain, structures on the slopes, and castle.

Other sites also have signs of occupation in the Ottoman period, implying a continuation from the Middle Islamic period. At Muratpaşa (AS 25), Sinclair mentions that there is a bridge that was said to date to the time of Ottoman Sultan Ahmed I (1603-1617) and an inscription on the bridge dates to 1848. Circassians were settled in Imma (Yenişehir, AS 345) in 1877 and 1878 (Sinclair 1990). In addition, a mill house in Imma is dated to the

<sup>40</sup> I would like to thank Asa Eger and Katie Johnson for their assistance with this material.



Late Islamic period (Sinclair 1990: 296), re-using the reservoir and canals that originated in the Roman period. So far, no Late Islamic pottery has been attested from the site.

### Historical Context of Settlement

The settlement evidence from the region suggests that the Amuq Plain went into serious decline after the end of the Frankish period. This would tend to support contemporary European travelers who came to the region, although it may not be as serious as was suggested as their laments for the fate of Antioch might suggest (Vorderstrasse 2005a: 138). One reason for the decline in settlement may have been the fact that the region was no longer the focus of attention of either the Mamluks or the Ottomans, apart from extracting heavy taxes. A possibly resulting increase in nomadic settlement in the area would be difficult to observe in the survey data.

An insight into how the Amuq Plain was viewed in 16<sup>th</sup> century Ottoman court circles is provided by a drawing in a manuscript recording the first Persian campaign of Sultan Süleyman in 1534-36, composed by Nasuh Matrakçı (Istanbul University Library, Ms. 5964). This manuscript contains a number of pictures representing towns, villages, and the countryside. It is clear that the representations in the manuscript are reasonably accurate, although there was a certain amount of standardization (Taeschner 1956: 53; Taeschner 1962: 55; Yurdaydin 1976: xix-xx, xxii, 151, 153-154 with complete color facsimile of the manuscript). It is only recently that these miniatures have been recognized as being important for settlement studies of a particular region (Lefort 2003). The miniature in question has not previously been recognized as a depiction of the Amuq Plain and the Lake of Antioch. The folio (reproduced in Yurdaydin 1976 in color as Fol. 107b) depicts a lake being fed by the branch of one river, while the second branch continues to the southwest, where it is crossed by a bridge. The text next to the bridge reads: *Göl-i Avam*, while the text below notes that this is a bridge over the Orontes (Taeschner 1962: 92). The lake is full of birds and their are fish swimming in the river and river birds wading. On the plain itself there are deer and trees. The overall picture is one of a natural paradise. In addition, there are a number of mounds that have been drawn. The overall manuscript is quite accurate from a topographical point of view, so it is possible that the artist is actually trying to depict ancient mounds in the Amuq Valley. What is remarkable, however, is that there is no sign of any settlement either around the lake or by the bridge over the Orontes (presumably Demirköprü, AS 297).

The evidence from Ottoman tax registers shows, in agreement with the AVRPs survey data, that the region was not quite so empty. In the Amuq and neighbouring Aleppo countryside, peasants largely worked lands owned by others and then received proceeds from their labor after the taxes on the profits had been taken. The types of products that they would have grown include wheat, olive trees, vines, fruit-bearing trees, garden produce, and legumes (Murphey 1987; Marcus 1989: 13, 17; Venzke 1997). There is a rich source of information here about the rural countryside from the 16<sup>th</sup> to 19<sup>th</sup> century, which so far has barely been tapped into (cf. Given 2000 for a study on Cyprus).

Whereas most reports by European travelers tend to be written in a highly impressionistic vein and do not really inform us about the specifics of village life in the

Amuq Valley in the Ottoman period, one report stands out by its wealth of information. Martin Hartmann visited northern Syria in 1882-1883 and recorded the topography of the region in considerable detail (Hartmann 1892; Hartmann 1894). Despite the importance of this survey, Hartmann's work has largely been neglected to date (the exception are Arnold 1998 and Vorderstrasse 2005a: 142-143, 146). Braidwood only mentions Hartmann as being valuable for his map and "its contributions to nomenclature" (Braidwood 1937: 2, no. 1). Hartmann's studies of north Syria include not only lists of settlements (accompanied by detailed maps) but also a discussion of the number of households per settlement, the language that they spoke, their religion, and their ethnicity. This means that his topographical studies can bring us considerably closer to understanding what was occurring in the Amuq Plain in the Ottoman period. From Hartmann we know that the region was inhabited by Arabs, Turkmen, and Armenians who spoke a variety of languages including Arabic, Turkish, and Armenian and were Muslims, Christians, and Jews. At the present stage of research, initial steps are made to correlate Hartmann's information with survey data from Braidwood as well as AVRP.

Jisr Ḥadid (Demirköprü, AS 297), is described by Hartmann as being made up of 40 households of Arabic-speaking Muslims (Hartmann 1894: 504, no. 3). Late Islamic material was recorded by the AVRP survey and there is also an Ottoman inscription at the site. According to Sinclair, this inscription records that the bridge (which originated in the Roman period) was rebuilt in 1838 (Sinclair 1990: 295). This is around the same time as the aforementioned 1848 Muratpaşa bridge inscription. Another village recorded by Hartmann where Late Islamic material has been found is Eski Enek (AS 319). The site, located in the Jebel al-Aqra, is extensive and has a large number of standing remains (Casana/Wilkinson 2005a: 44). Pottery recorded by AVRP dates from the Middle Islamic and Late Islamic periods. Hartmann states that the site of Eski Enek contained the homes of 80 Arabic speaking Muslim families (Hartmann 1894: 505, no. 33). The site of Ağa Çiftliği (AS 348), a walled courtyard farmhouse with an Ottoman inscription above the gate, seems to be Hartmann's Tschiftlik reschid Agha. In this case Hartmann's description that it was inhabited by 40 families (1894: 505, no. 80), suggests that perhaps the farmhouse included smaller homes that were dependents under its protection as workers or independent land owners. In other cases it is more difficult to match survey data and Hartmann's claims. Some villages that were found inhabited by Hartmann did not yield Late Islamic pottery when they were surveyed. This may well be due to the fact that the survey did not investigate the interior spaces of every village, many of which would probably have traces of the 19<sup>th</sup> century remains.

Problems of correlating archaeological and historical information are to be expected, of course, but further research that integrates the archaeological materials, tax registers and Hartmann's geographical survey could develop new ways to elucidate the dynamics of settlement and rural economy in the Late Islamic period.

## CONCLUDING REMARKS

Fokke Gerritsen

For reasons explained in the introduction, this article has not treated the Bronze Age and Iron Age landscapes of the Amuq Valley and surrounding uplands. Much more could have been said about each of the preceding and subsequent periods. One of the aims of this article, however, has been to move across the major chronological boundaries that customarily separate the pre-classical Near East, the Hellenistic, Roman and Late Roman/Byzantine periods, and the Islamic periods into discrete fields of research. A regional approach, and especially one with a landscape-archaeological study at its core, is well suited to break down these invisible barriers.

Without downplaying the unique character of each period, and the specific expertise needed to further our understanding of each period, we contend that a long-term perspective can provide a context to many developments and brings them into sharper focus. It works from the premise that communities always have to make a living in landscapes that had been created through the interaction between previous human generations and the environment. In the case of the periods discussed here, this was clearest in the Early Islamic Period. At this time the expansion of the marshes in the valley center prompted new lifestyles and produced new settlement patterns, but was ultimately the result of the exploitation of the uplands and the soil erosion that had been caused by it since the Roman Period.

This same example serves to demonstrate a second feature of the approach taken by this study, in addition to developing a long-term perspective. This is the view that the settlement patterns inferred from the survey data have to be studied in the context of broader political-historical, economic and cultural developments. Whereas it could seem that new lifestyles in the Early Islamic Period were dictated by the changing environment, it is clearly relevant that the region became part of the frontier zone of an expanding political and religious entity at this time, and that new groups may have moved in from marshland environments elsewhere.

With the possible exception of the pre-Bronze Age Periods, the communities of the Amuq Valley were never isolated from larger social and political entities, and frequently incorporated in geographically extensive, powerful and highly centralized empires. Sometimes the Amuq Region was situated close to the center of power and administration, sometimes rather towards the margins. But in all periods external factors, including taxation systems, imperially imposed land tenure practices, economic market forces, long-distance road systems, or even religious movements, affected the way in which local communities made a living and organized their surroundings. Even though it is frequently textual information that allows us to outline these factors, archaeology like no other discipline is suited to disentangle the different external and internal, global and local dimensions that shape cultural landscapes over millennia.

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## APPENDIX 1

**Fig. 5: Selected ceramics from pre-Bronze Age settlements**

1) **AS 349**, dark faced burnished ware, 2.5 YR 4/4, Ø22, 22° (Amuq A or B); 2) **AS 349**, dark faced burnished ware, reddish brown 5YR 5/3 (Amuq A or B); 3) **AS 26**, coarse simple ware, dark gray paste with brown oxidized surfaces, soft common chaff. Ø20 (Amuq A or B); 4) **AS 349**, incised ware 10 YR 6/3 (Amuq A or B); 5) **AS 93**, burnished-incised ware, interior and upper lip area of exterior above the incised portion burnished. Ø15, 10° (Amuq A or B); 6) **AS 349**, coarse simple ware, soft, friable textured unburnished ware, outer surface: 10YR 8/3, inner core: Gley 1 4/N. Ø30, 2° (Amuq A or B); 7) **AS 349**, coarse simple ware, mineral tempered unburnished ware, 10YR 6/3. Ø20, 18° (Amuq A or B); 8) **AS 349**, coarse simple ware, stancing questionable because rim uneven, 10YR 3/1 Ø ca. 44, 2° (Amuq A or B); 9) **AS 26**, coarse simple ware, coarse chaff tempered, core black, some slight mineral inclusions Ø30, 10° (Amuq A or B); 10) **AS 97B**, chaff-faced simple ware straw/chaff tempered, unoxidized core, 2.5 T 7/2, Ø20, 15° (Amuq F) 11) **AS 97B**, chaff-faced simple ware, mineral/chaff tempered plain ware, 7.5 YR 4/2 Ø20, 25° (Amuq F); 12) **AS 97B**, chaff-faced simple ware, black core with orange oxidized surface, exterior: 5YR 7/4, Ø30, 35° (Amuq F); 13) **AS 172**, chaff-faced simple ware, straw-chaff tempered, 10YR 6/4, Ø21, 29° (Amuq F); 14) **AS 97B**, smooth-faced simple ware, mineral tempered, oxidized paste, made on slow wheel. 5YR 7/4, Ø24, 12° (Amuq F); 15) **AS 157**, chaff-faced simple ware, chaff/mineral temper, 10 YR 7/3, Ø30, 17° (Amuq F).

**Fig. 6: Selected ceramics from pre-Bronze Age settlements**

1) **AS 168**, monochrome painted ware, mineral temper, reduced, base: 7.5 YR 7/3, paint: 7.5 YR 3/1 Ø30, 36° (Amuq E); 2) **AS 97B**, monochrome painted ware, medium-fine mineral temper, base: 2.5YR 7/3, paint 2.5 YR 4/1, Ø16, 10° (Amuq E); 3) **AS 168**, monochrome painted ware, mineral temper, base: 7.5 YR 7/3, paint: 5YR 2.5/2 (Amuq E); 4) **AS 97B**, monochrome painted ware, mineral temper, base: 2.5 Y 7/3, paint: 2.5 Y 4/1, Ø10, 50° (Amuq E); 5) **AS 97B**, monochrome painted ware, mineral temper, base: 2.5 Y 7/3, paint 2.5 Y 4/1 Ø10, 10° (Amuq E); 6) **AS 168**, monochrome painted ware, mineral temper, base: 5YR 7/4, paint 5YR 2.5/2, Ø24, 47° (Amuq E); 7) **AS 135**, monochrome painted ware, mineral temper, stance questionable because rim chipped, base: 10YR 8/3; paint 7.5 YR 7/2; Ø ca. 26, ca. 8° (Amuq E); 8) **AS 168**, monochrome painted ware, chaff temper, base: 10YR 7/2, paint 5YR 2.5/2, Ø30, 11° (Amuq E); 9) **AS 135**, simple ware, fully reduced mineral temper, 7.5 YR 7/4, Ø30, 25° (Amuq E); 10) **AS 168**, monochrome painted ware, mineral temper, base: 10 YR 7/3, paint: 2.5 YR 3/2, Ø17, 35° (Amuq E); 11) **AS 168**, dark faced burnished ware splayed vessel, 5YR 4/3, Ø32, 12° (Amuq E or earlier); 12) **AS 168**, mineral and chaff tempered plain ware, 7.5 YR 7/4, Ø24, 28° (Amuq E); 13) **AS 168**, mineral and chaff tempered plain ware, 10YR 7/4, Ø21, 18° (Amuq E).

**Fig. 9: Selected ceramics Hellenistic Period settlements**

1) **AS 176**, Black Glaze Kantharos with “West Slope” decoration (Rotroff Fig. 15, 204); 2) **AS 28**, Black Glaze Kantharos (Rotroff Fig. 4, 1); 3) **AS 99**, Brown slipped cup (Waagé Pl. II, 75 k); 4) **AS 120**, Red slipped cup (Waagé Pl. II, 77 a); 5) **AS 283**, Red slipped cup (Waagé Pl. III, 79 a); 6) **AS 286**, Red slipped cup (Slane FW 177), 7) **AS 25**, Black slipped cup (Waagé Pl. II, 73); 8) **AS 281**, Brown slipped cup (Waagé Pl. II, 77 f); 9) **AS 91**, Brown slipped cup (Waagé Pl. II, 75 p); 10) **AS 278**, Brown slipped cup; 11) **AS 273**, Red slipped cup (Slane TA type 24); 12) **AS 271**, Red slipped cup (Slane FW 187); 13) **AS 267**, Red slipped cup (Slane TA type 25 a); 14) **AS 262**, Red slipped cup (Slane TA type 25 c); 15) **AS 264**, Rolled rim black slipped plate; 16) **AS 180**, Black slipped fishplate (Waagé Pl.I, 13 f); 17) **AS 273**, Brown slipped fishplate.

**Fig. 12: Selected ceramics from Roman Period settlements**

1) AS 282, Plate, Eastern Sigillata A (Waagé Pl. III, 116 f); 2) AS 317, Plate, Eastern Sigillata A (Hayes *Forma* 56); 3) AS 324, Plate, Eastern Sigillata A (Hayes *Forma* 4); 4) AS 266, Plate, Eastern Sigillata A (Hayes *Forma* 34); 5) AS 248 Plate, Eastern Sigillata A (Hayes *Forma* 37 a); 6) AS 272, Small Plate, Eastern Sigillata A (Waagé Pl. V, 422); 7) AS 270, Cup, Eastern Sigillata A (Hayes *Forma* 45); 8) AS 227, Cup, Eastern Sigillata A (Hayes *Forma* 23); 9) AS 36, Hemispherical Bowl, Eastern Sigillata A (Hayes *Forma* 24); 10) AS 264, Cup, Eastern Sigillata A (Hayes *Forma* 48); 11) AS 282, Plate, Eastern Sigillata A (Hayes *Forma* 57); 12) AS 227 Cup, Eastern Sigillata A (Hayes *Forma* 61); 13) AS 253, Plate, Eastern Sigillata A (Hayes *Forma Tarda F*); 14) AS 286, Eastern Sigillata A (Waagé Pl. VII, 635); 15) AS 187, Eastern Sigillata A (Hayes *Forma* 39); 16) AS 84, Plate, Eastern Sigillata A (Waagé Pl. IV, 143 f); 17) AS 253, Cup, Eastern Sigillata B (Hayes *Forma* 29).

**Fig. 14: Selected ceramics Late Roman Period settlements, Hellenistic and Roman plain wares.**

1) AS 246, Plate, African Red Slip Form 3; 2) AS 169, Plate, African Red Slip Form 67; 3) AS 32, Plate, Late Roman C (Phocaean Ware) Form 3; 4) AS 130, Plate, Late Roman C (Phocaean Ware) Form 3; 5) AS 99, Plate, Cypriot Red Slip Ware, Form 1; 6) AS 44, Plate, African Red Slip Form 104; 7) AS 32, Bowl, Çandarlı Ware, Form 3; 8) AS 28, Hellenistic Cooking Ware Jug; 9) AS 253, Roman Plain Ware jar; 10) AS 28, Hellenistic Cooking Ware pot; 11) AS 124, Hellenistic Mortarium; 12) AS 32, North Syrian Mortarium; 13) AS 110, Late Roman Jug.

**Fig. 16: Selected ceramics from Early Islamic Period settlements**

1) AS 4B, vertical rim brittleware (redware), Ø12 (Mackensen 1984, 11.23, 24.5, 29.5.); 2) AS 344, vertical rim brittleware (redware), Ø16.5 (Mackensen 1984, 21.4); 3) AS 345, vertical rim brittleware (redware), Ø9 (Mackensen 1984, 27.15-16); 4) AS 202, holemouth brittleware (redware), Ø13 (Whitcomb 2000 7.j); 5) AS 25, holemouth brittleware (redware), Ø25 (Northedge 1988, 42.6, 39.9/10c); 6) AS 41, holemouth brittleware (redware) (Bartl 1996, 4.5); 7. AS 202, inverted rim brittleware (redware), Ø17 (Whitcomb 2000, 25.q); 8) AS89, creamware, Ø8 (Bavant & Orssaud 2001, 4.19); 9) AS89, creamware, Ø12 (Sack 1996, 52.2); 10) AS122, creamware, Ø6 (Northedge 1988 40.8-11); 11) AS99, creamware, Ø10.5 (Whitcomb 2000, 5.d); 12) AS224, creamware, Ø11 (Whitcomb 2000, 7.n); 13) AS345, creamware, Ø14 (Bartl 1996, 2.1); 14) AS41, creamware lid, base Ø5 (Bavant & Orssaud 2001, 8.36-7); 15) AS 29, Syrian yellowglaze orangeware, base Ø8 (Watson 1999, 19.n, 94.f-i, 95. a-g); 16) AS 29, Syrian yellowglaze orangeware base Ø9 (Watson 1999, 19.s, 94.f-i, 95.a-g); 17) AS 32, Syrian yellowglaze orangeware, base Ø10 (Watson 1999, 19.c); 18) AS 32, colorsplash sgraffiato, Ø15.5 (Vorderstrasse 2005a, C223E.1937, C223F.1937); 19) AS 32, yellowglaze, Ø23 (Watson 1999 92.k, 97.c).

**Fig. 18: Selected ceramics from Middle and Late Islamic Period settlements**

1) AS 120, Splash Ware Sgraffiato; red-brown fabric, medium, moderate; white slip, light yellow glaze; interior, green, yellow-brown, sgraffiato; exterior, yellow-brown; 2) AS 120, Splash Ware Sgraffiato; red fabric-brown fabric, medium, moderate; white slip, light yellow glaze; interior, green, yellow-brown, sgraffiato; 3) AS 25A, Raqqa Ware; white fabric, fine, small temper; interior, white slip, green-blue glaze; 4) AS 108B, Imitation Raqqa Ware; red-brown fabric; medium, moderate temper; interior, white slip, blue glaze; 5) AS 52A, Port St. Symeon Ware; Rim too small for radius; white slip, clear glaze going over rim; interior, sgraffiato, green, manganese; 6) AS 25, Port St. Symeon Ware; red-brown fabric, medium ware, moderate temper; light green glaze; sgraffiato int. and ext.; 7) AS 21, Ottoman; fine ware, small temper; white glaze; 8) AS 105N, Pipe; burnished; red fabric; fine, small temper; impressed; 9) AS 52B, Pipe; burnished; red fabric; fine, small temper; impressed; 10) AS 105A, Ottoman Rouletted Ware; medium, moderate fabric; buff; ext. rouletted decoration.

## APPENDIX 2

**Additions and corrections to the Gazetteer of Archaeological Sites**  
(Casana/Wilkinson 2005b) (information that is unchanged from the gazetteer is not included).

<b>AS 91</b>	<b>Paşa Höyük</b>
DATE	2005 collection of field at foot of W side of mound: some Hellenistic, Roman (1 <sup>st</sup> c. BCE-2 <sup>nd</sup> c. CE), abundant Middle and Late Islamic.
<b>AS 96</b>	<b>Tarfah Höyük</b>
NOTE	Information in Casana/Wilkinson 2005b is correct, but site labelled as AS 96 on fig. A.6. (p. 264) is AS 97. AS 96 lies 200 m to the west.
<b>AS 97</b>	<b>Tabarat Tarfah</b>
AREA	100 x 100 m
DATE	Mostly Chalcolithic (Amuq E-F range).
DESCRIPTION	Small site 200 m to the east of village of Tarfah (AS 96), completely levelled by bulldozer. Common sherds on the surface of a plowed field. The intact site shows up well on CORONA imagery.
<b>AS 103</b>	<b>Tabarat Mastepe</b>
NOTE	Casana/Wilkinson 2005b identifies AS 103 with an unvisited anomaly on the CORONA imagery, 1 km to the west of AS 161. Intensive field-walking in this area in 2005 did not demonstrate the presence of a site here. The location of Braidwood's AS 103 is therefore still uncertain.
<b>AS 107</b>	<b>Hürriyet Tepe (Tabarat Hürriyet)</b>
AREA	100 x 100 x max. 2 m
DATE	Based on small collection: Hellenistic, Early Roman; possibly some Chalcolithic
DESCRIPTION	Low mound with gentle slopes to all sides, completely covered by modern village. There are some cuts into the mound near the summit. Dressed limestone blocks and milling basin on the surface.
<b>AS 109</b>	<b>Tell Ibrahimiyah</b>
AREA	100 x 200 x max. 2 m
DATE	Assemblage appears to consist of Late Chalcolithic/Early Bronze Age; scant Late Roman
DESCRIPTION	Extensive area of irregular mounding, mostly under cultivation at the time of visit and boundaries impossible to establish.
<b>AS 111</b>	<b>Tallat</b>
DATE	Late Hellenistic, Early Roman (predominantly), Late Roman
DESCRIPTION	Extensive area with cultural material at the surface, including large dressed limestone blocks. According to farmers, two mounds here were bulldozed about 15 years previously. The remaining parts of the site(s) are largely under irrigation.
<b>AS 125</b>	<b>Saçaklı</b>
AREA	100 x 100 m
DATE	Bronze Age/Iron Age
DESCRIPTION	Low mound, largely under house, garden plots and road, which have probably significantly landscaped the original mound. Collection was mainly done at the east side of the mound.



<b>AS 138</b>	<b>Tell Saluq</b>
DATE	2005 collection from summit of mound: Late Roman, Early Islamic, much Middle Islamic
<b>AS 157</b>	<b>Ayrancı (Büyük Ayrancı, Batı Ayrancı)</b>
SIZE	(approx.) 100 x 200 m x max. 5 m
DATE	Based on small collection: Late Chalcolithic (Amuq F chaff faced wares). No indication for Hellenistic or later.
DESCRIPTION	Site completely covered by modern village, and visibility for artefacts is poor.
<b>AS 159</b>	<b>Zoba Höyük</b>
SIZE	not measured
DATE	Some Early Roman, predominantly Late Roman, Late Islamic
NOTE	In contrast to the conclusion drawn in the 2005 gazetteer, the site is not located under the modern village but on the hill slope to the east.
DESCRIPTION	Site is situated on a natural hill with olive groves. The extent of the unmounted site in shown only by the scatter of roof tile and sherds, which occur mainly on the northern slopes of the hill. Some dressed limestone blocks on the surface.
<b>AS 168</b>	<b>Karaca Khirbet 'Ali</b>
DATE	2005 collection includes Chalcolithic (Amuq C/D/E) as well as Middle Islamic.
<b>AS 172</b>	<b>Tell Qirmidah (Tell Kirmīt)</b>
DATE	2005 collection: Chalcolithic, few Hellenistic/Early Roman, some Late Roman.
<b>AS 204</b>	<b>Harranköy</b>
DATE	2005 collection: Roman, Late Roman, much Early Islamic, some Late Islamic.
<b>AS 205</b>	<b>Cudeidah</b>
DATE	2005 collection: Roman, Late Roman.
<b>AS 222</b>	<b>Konut köy (Vesvese köyü)</b>
DATE	2005 collection: Roman, Late Roman, scanty Early Islamic and Middle Islamic.
<b>AS 254</b>	--
DATE	Hellenistic (abundant), Roman, possible Late Roman, Middle Islamic.
<b>AS 255</b>	<b>Açıttepe</b>
DATE	2005 collection (mainly from southern slopes): Hellenistic (beginning in 4 <sup>th</sup> c. BCE), Early Roman, Late Roman, Middle Islamic.
DESCRIPTION	Top of mound is covered by a farmstead under trees, but exposed slopes extend into irrigated fields to the south. Dressed limestone pieces, overfired roof tile wasters on the surface. Farmers show several mold-made figurines and the location in irrigation ditch where they were found.
<b>AS 297</b>	<b>Demirköprü (Gephyra, Jisr Hadid)</b>
DATE	2005 collection from riverbed near Ottoman bridge: Middle and Late Islamic.
NOTE	Casana/Wilkinson 2005b notes that the extent of the ancient settlement is visible on CORONA imagery. Ground-truthing in 2005 was not successful in establishing the location and extent of the settlement, due to modern occupation.

- AS 345**                      **Yenişehir (Imma)**  
 DATE                      Town center: Late Roman, Early Islamic, scant Middle Islamic. NW outskirts: few Early Roman, common Late Roman, abundant Early Islamic, Middle Islamic.  
 NOTE                      Date in Casana/Wilkinson 2005b based on architectural remains as Late Roman or Late Antique. In 2005 season, collections were done at several open lots around the town. While surveying, the unearthing was observed by a bulldozer for sewage works of very large roughly dress limestone blocks (up to 1.80 x 0.40 x 0.40 m), undoubtedly of a major architectural structure, and a 1.20 m tall cylindrical limestone millstone.
- AS 347**                      --  
 AREA                      150 x 150 m (approx.)  
 DATE                      Hellenistic, Early Roman, some Late Roman, Early/Middle/Late Islamic. Perhaps 1-2 Bronze Age sherds  
 DESCRIPTION              Flat site without clear boundaries, partly covered by crops at the time of visit.
- AS 348**                      **Ağa Çiftliği**  
 AREA                      30 x 30 m  
 DATE                      Recent Ottoman  
 DESCRIPTION              Still occupied farmstead with buildings around a courtyard. An elaborate stone gate building carries an Ottoman inscription. Undated sherds in a garden lot within the compound have been brought in from elsewhere.
- AS 349**                      --  
 AREA                      200 x 200 x max. 2 m  
 DATE                      Neolithic (possibly Amuq A/B burnished bowls), Late Chalcolithic (Amuq F/G, reserved slip, chaff-faced wares); Early Roman  
 DESCRIPTION              Small site largely under irrigation at the time of visit.
- AS 350**                      --  
 AREA                      70 x 70 m x 1.5 m  
 DATE                      Some Hellenistic, predominantly Early Roman continuing into Late Roman  
 DESCRIPTION              Small mounded site with gradual slopes, almost completely under cultivation at the time of visit. Extent of the mound established partly on the basis of crop color differences.
- AS 351**                      --  
 AREA                      not measured  
 DATE                      unknown  
 DESCRIPTION              The site is covered by a walled-in cemetery under trees and only the sites edges were accessible at the time of visit. Scant sherds on the surface but no collection yet.
- AS 352**                      **Ceryan Tepe (Azmi Öcal Çiftliği)**  
 AREA                      unknown  
 DATE                      Hellenistic, Early Roman, Late Roman, Early Islamic.  
 DESCRIPTION              Site is completely covered by modern village and extent is unknown. Collections were only made in the courtyard of a farmstead where the inhabitants had unsuccessfully tried to unearth a tree. The pit showed cultural layers including wall foundations to at least 1.5 meters below the surface, and produced ceramics, glass, glass slag and roof tile.

<b>AS 353</b>	--
AREA	75 x 75 x 1.5 m
DATE	Mainly Late Chalcolithic (Amuq F, few painted wares, chaff-faced wares, sand tempered handmade buff wares, no dark faced burnished or unburnished wares); few late Hellenistic or Early Roman sherds
DESCRIPTION	Site has been plowed but was not under cultivation at the time of visit. Some of the top of the low mound appears to have been levelled. Several complete grinding stones on the surface.
<b>AS 354</b>	--
AREA	100 x 100 x 3 m
DATE	In Middle Bronze Age to Iron Age range; very few Early Roman
DESCRIPTION	Roughly circular small mound with gradual slopes to all sides. Partly under irrigation but no signs of severe damage.
<b>AS 355</b>	--
AREA	unknown
DATE	Late Chalcolithic
DESCRIPTION	Site is covered by alluvial or colluvial sediments (at least 0.5m deep) and was observed in the side of a large canal cut. There is human skeletal remains visible in the section, but also common handmade sherds that indicate that the site is probably not only a cemetery.

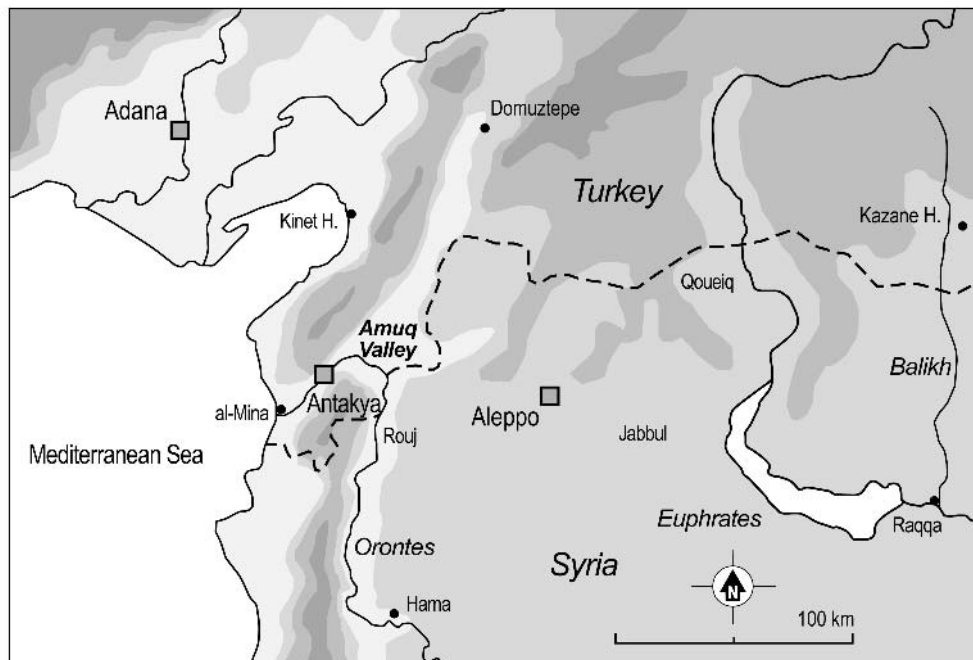


Fig. 1. The Amuq Valley in southern Turkey, with selected sites and regions mentioned in the text.

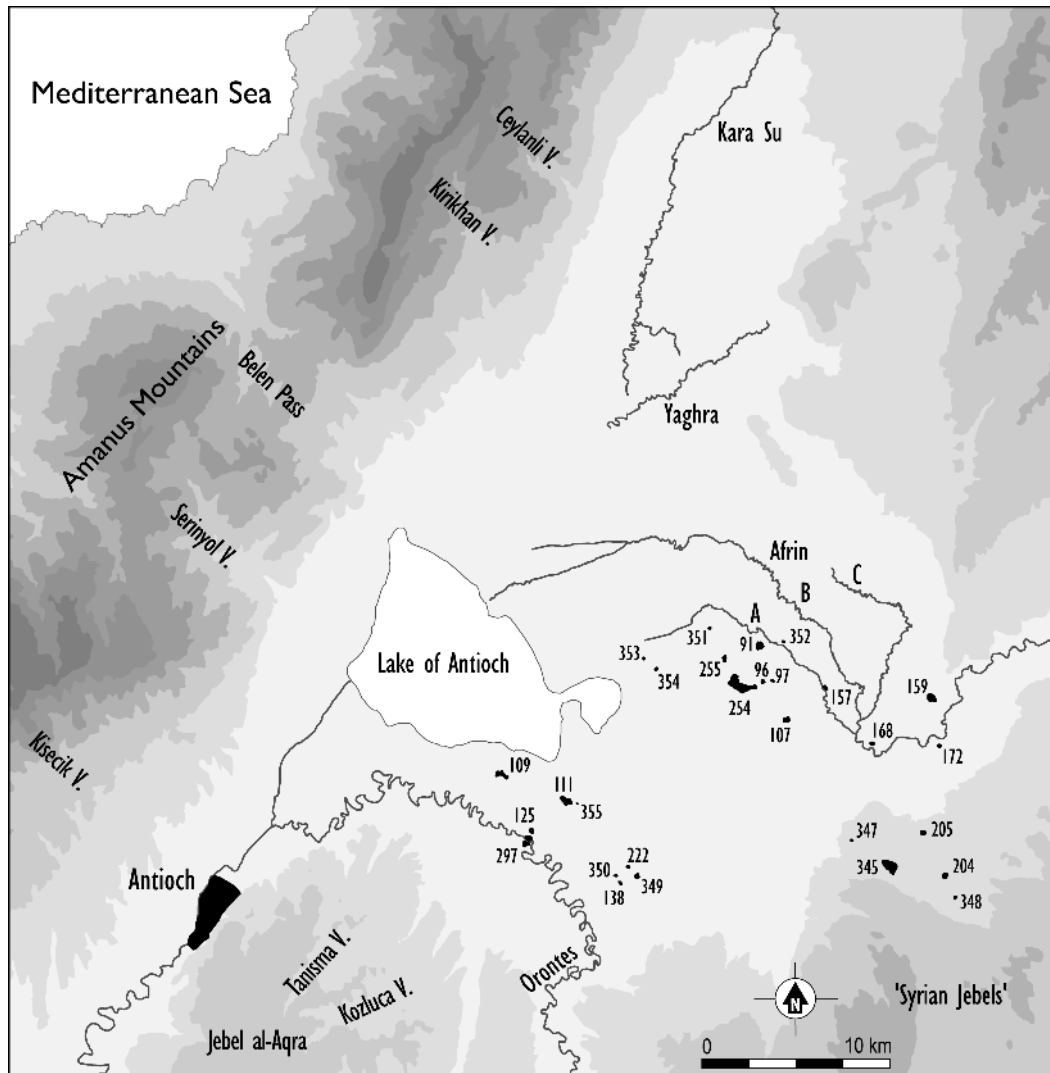


Fig. 2. The Amuq Valley and surrounding uplands, showing modern geographical names and sites that were surveyed in 2005.

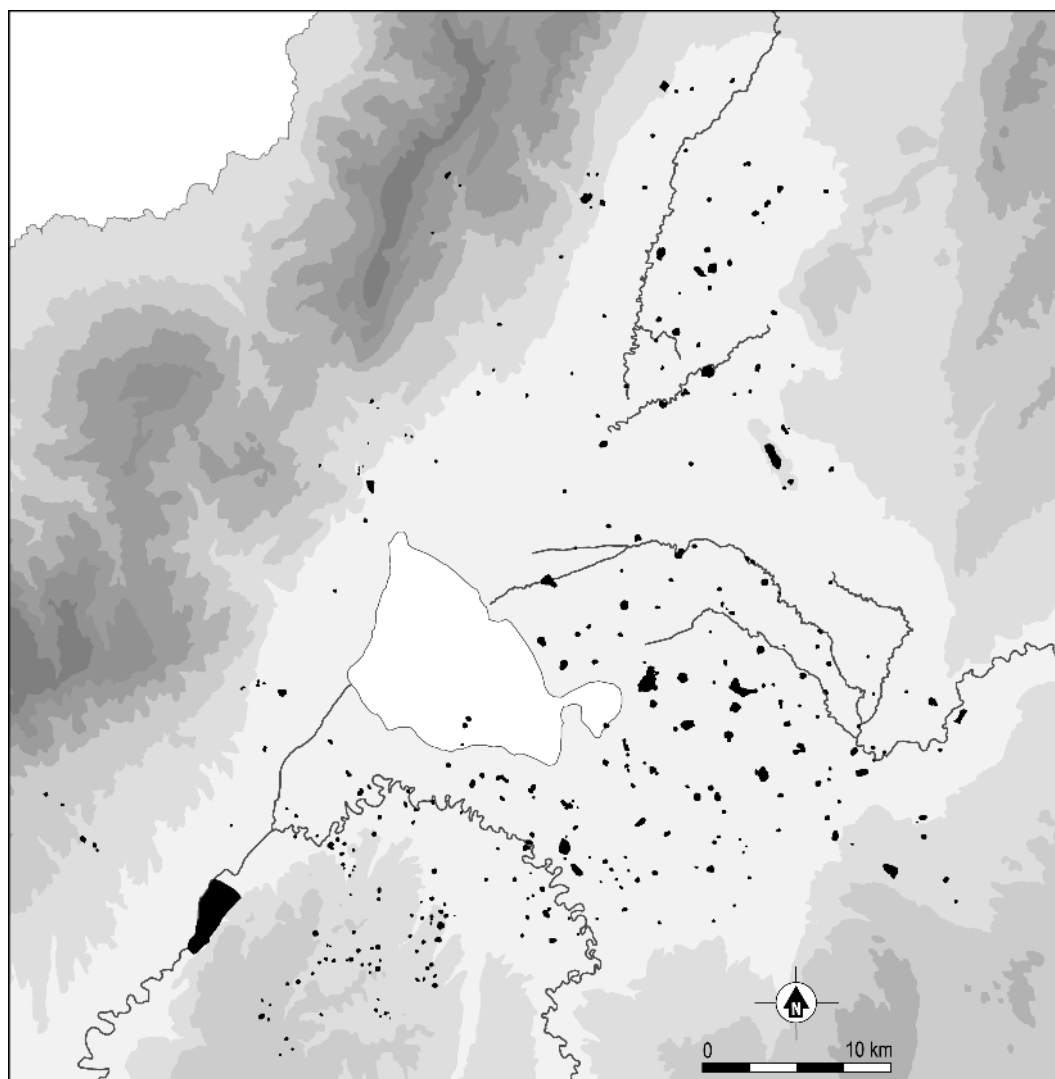


Fig. 3. The Amuq Valley and surrounding uplands, showing all sites recorded between 1995 and 2005 (after Casana 2003, fig. 1.1, with additions and corrections, see also Appendix 2).

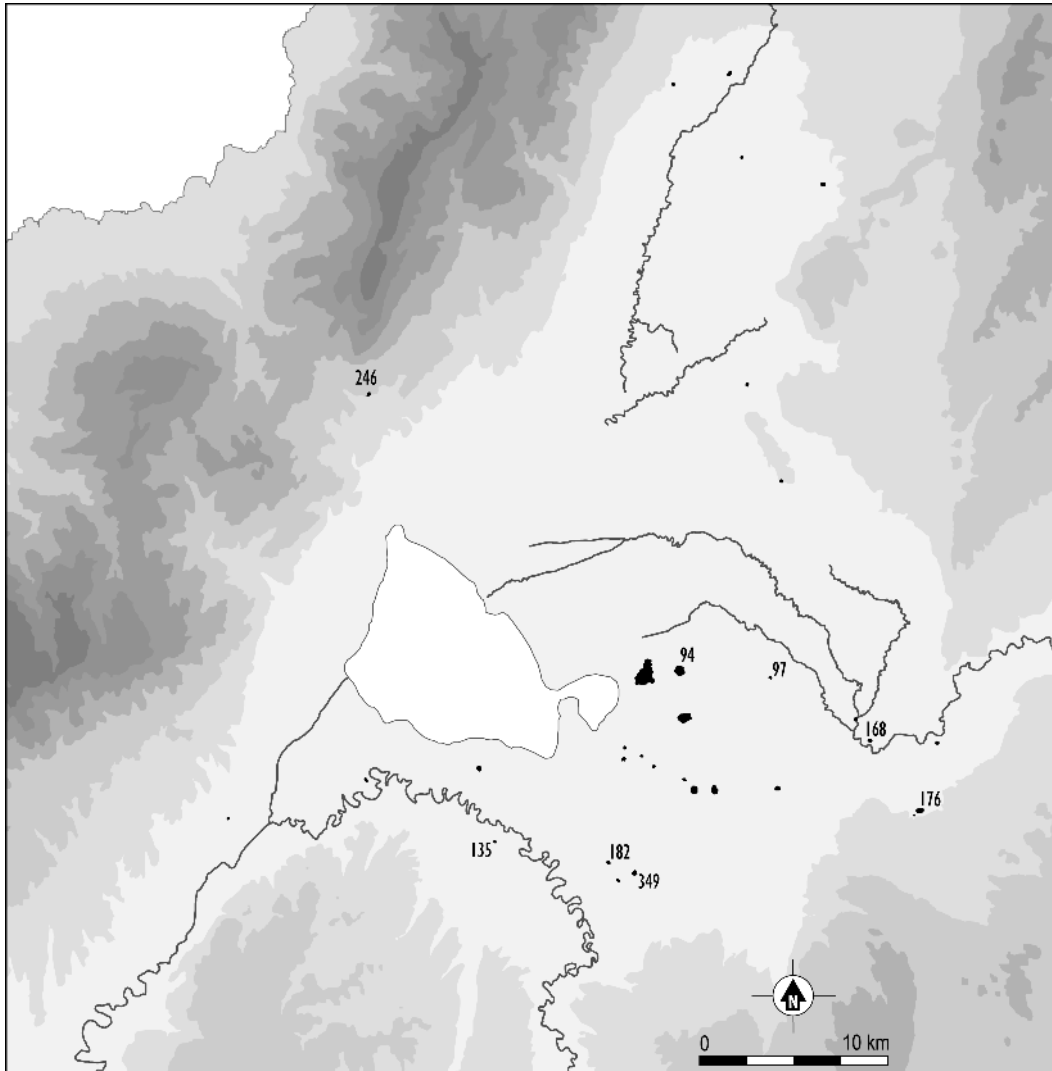


Fig. 4. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Amuq A-E Phases (Late Neolithic, Chalcolithic). Numbered sites are discussed in the text.



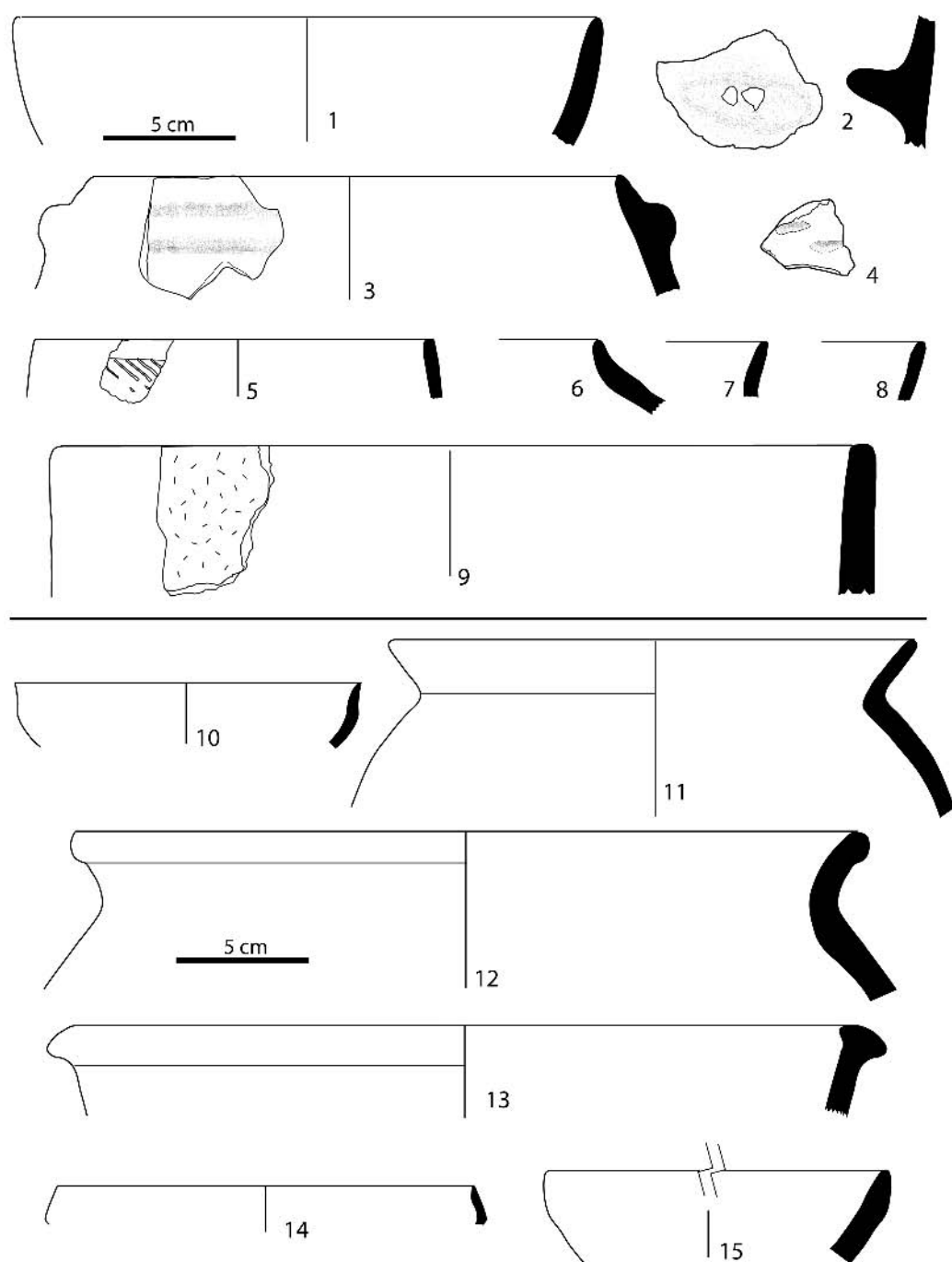


Fig. 5. Ceramics dating from the Amuq Phases A-D (1-9) and F (10-15), from selected sites.  
See Appendix 1 for details.

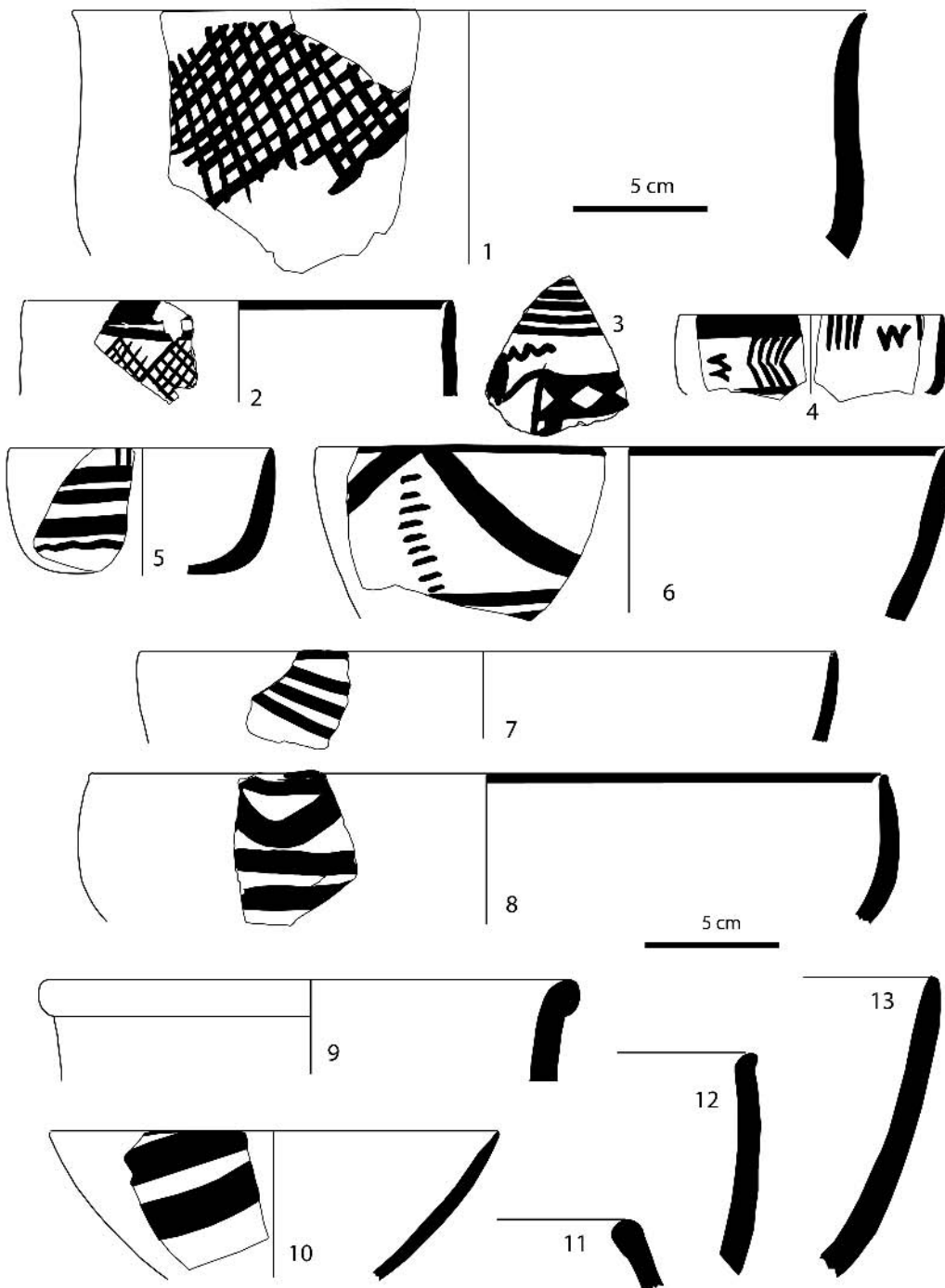


Fig. 6. Ceramics dating from Amuq phase E, from selected sites. See Appendix 1 for details.

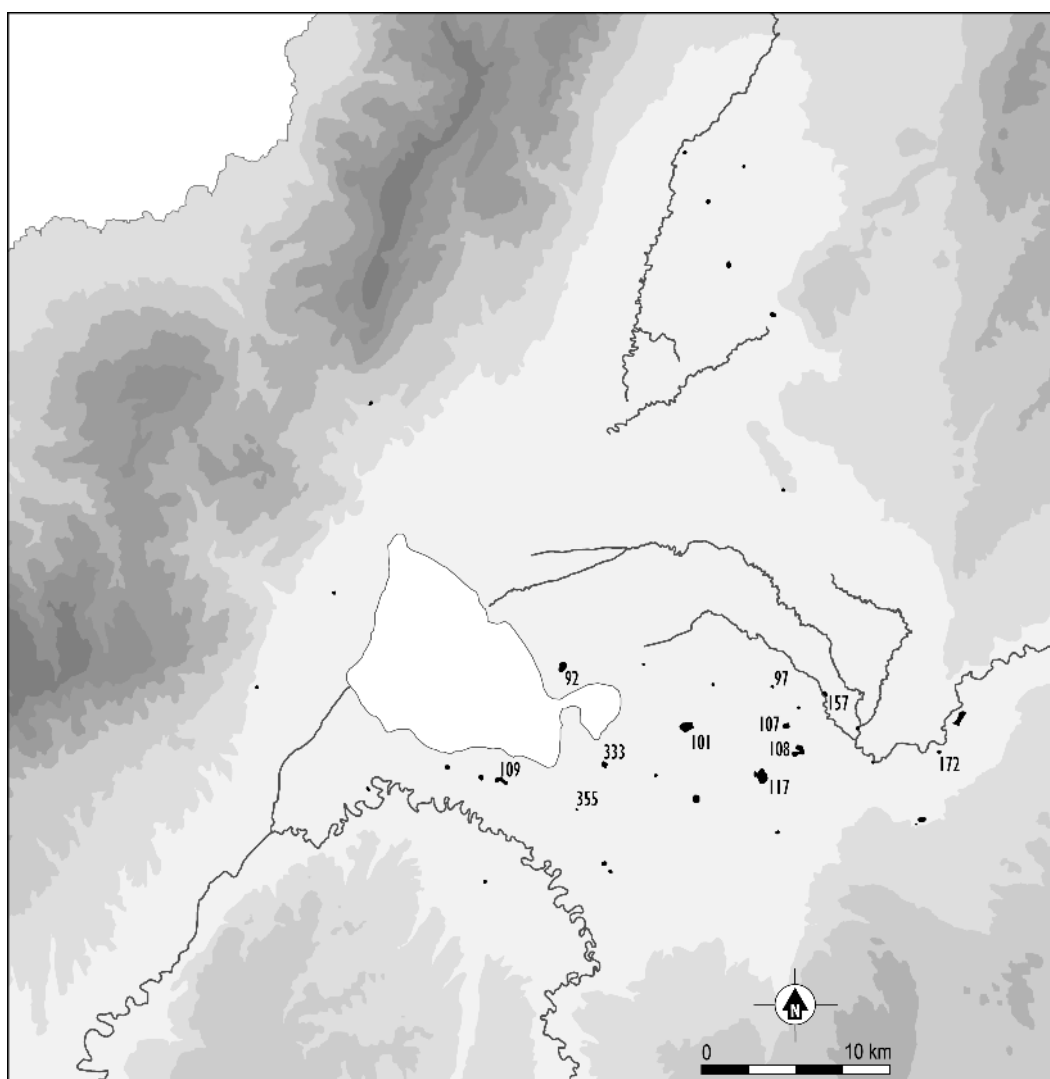


Fig. 7. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Amuq F Phase (Late Chalcolithic). Numbered sites are discussed in the text.

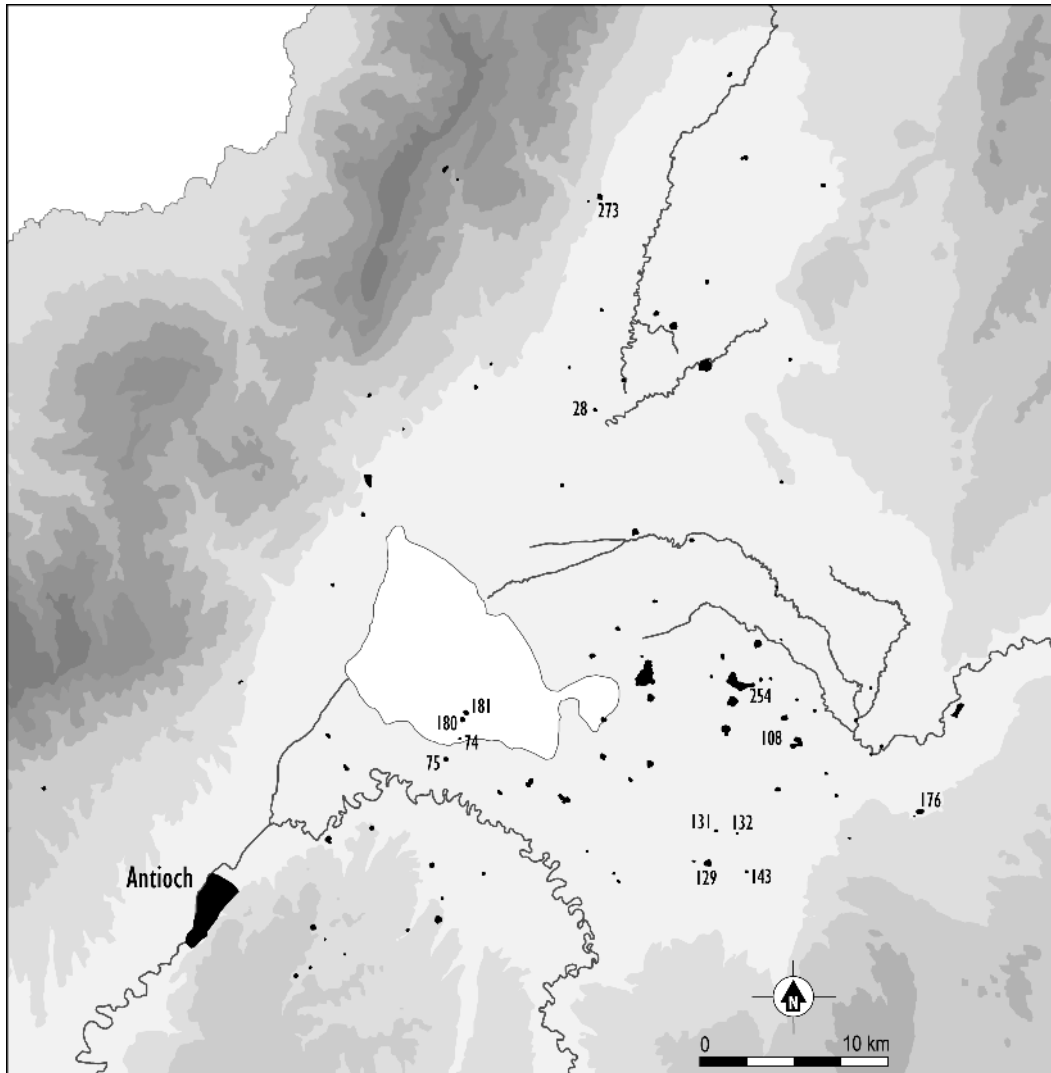


Fig. 8. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Hellenistic Period. Numbered sites are discussed in the text.

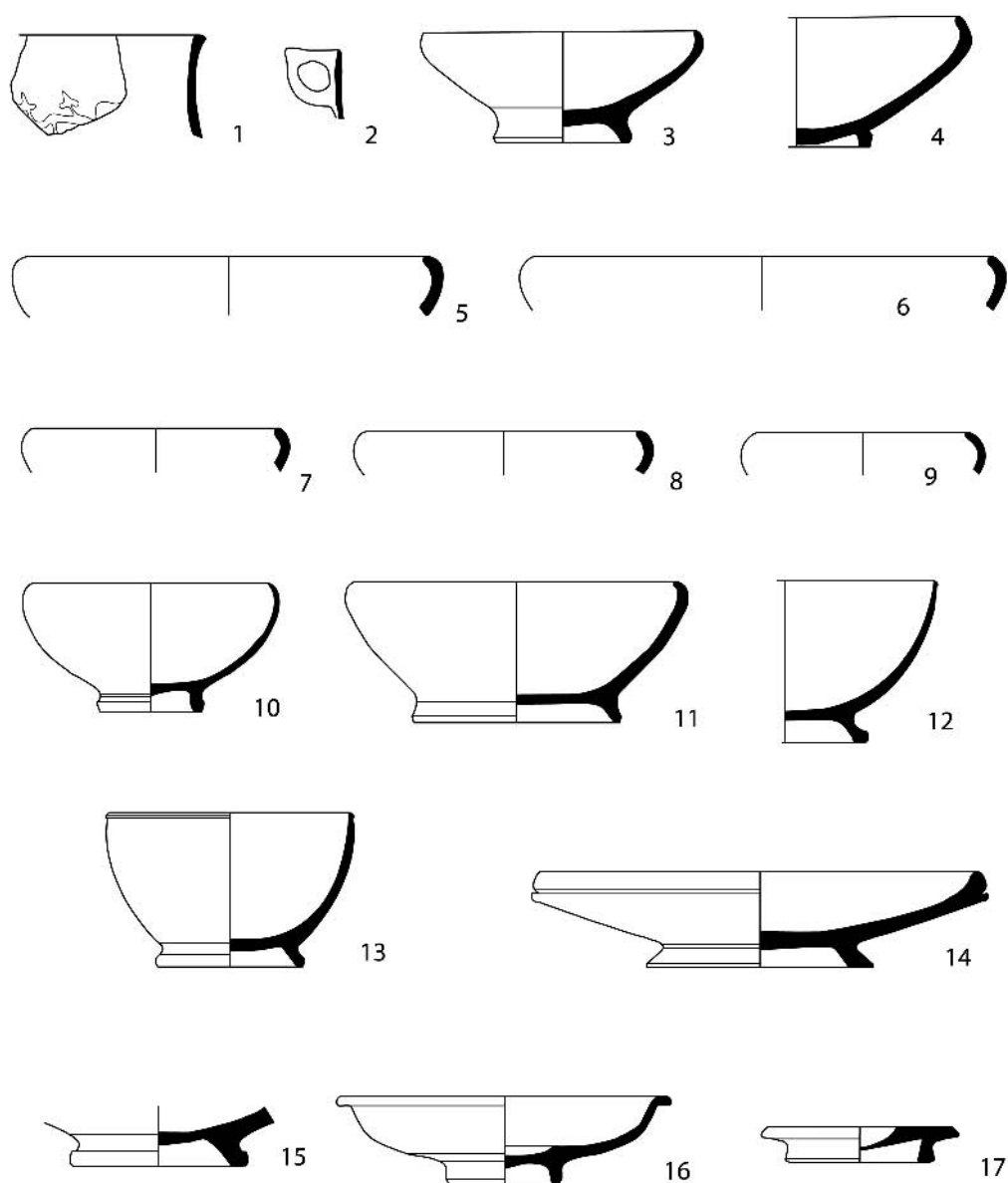


Fig. 9. Ceramics dating from the Hellenistic Period, from selected sites. See Appendix 1 for details.

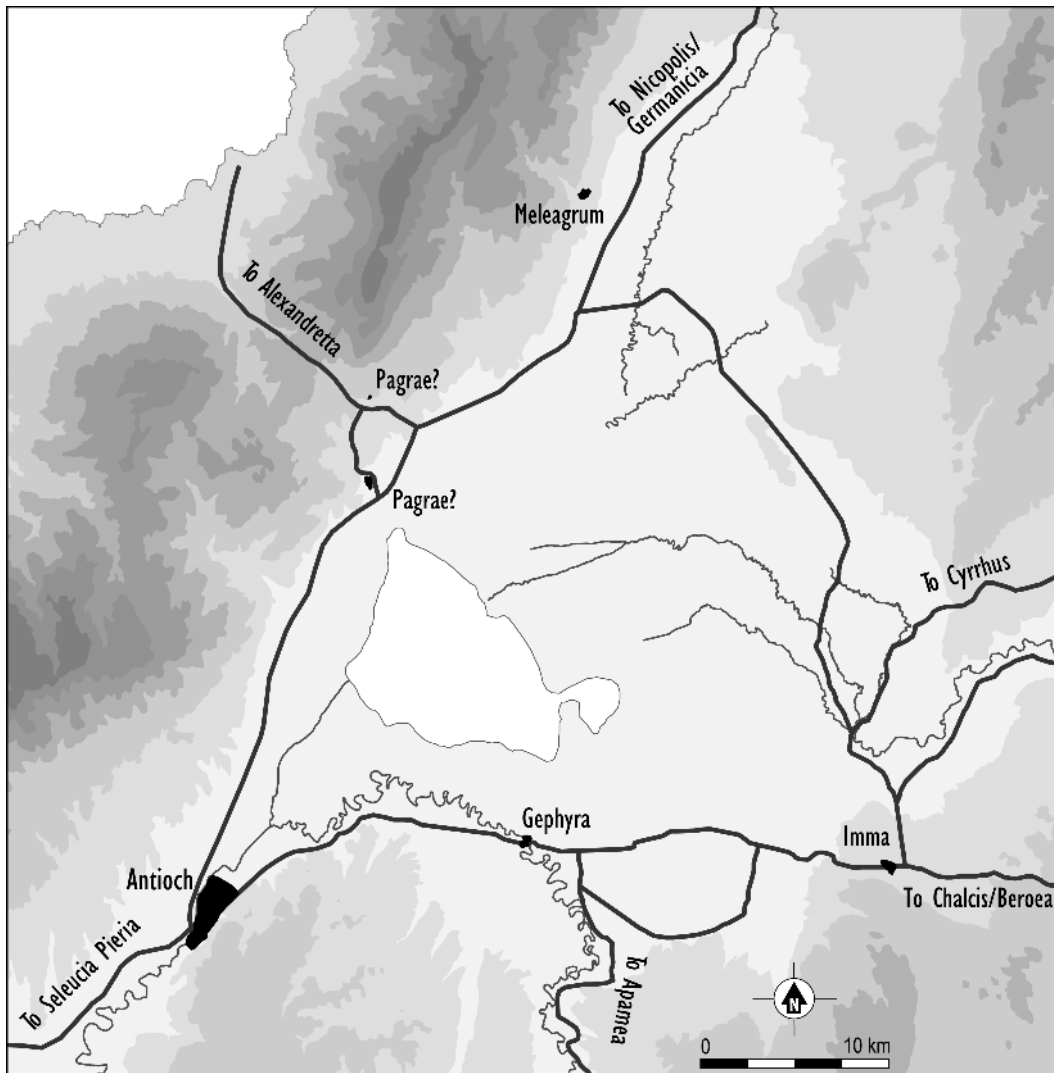


Fig. 10. The Amuq Valley and surrounding uplands, showing major routes and the locations of selected classical and medieval towns that are textually documented.



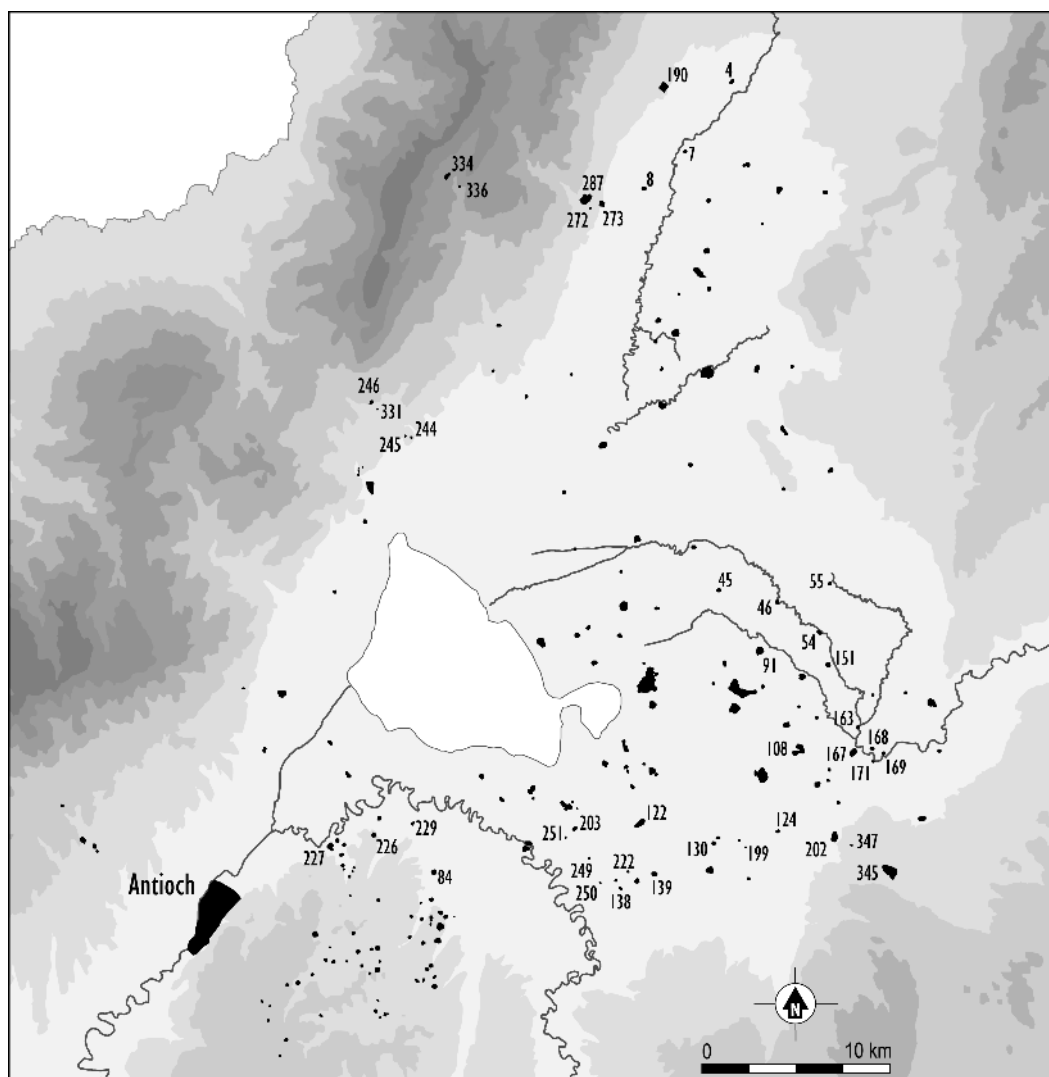


Fig. 11. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Roman Period. Numbered sites are discussed in the text.

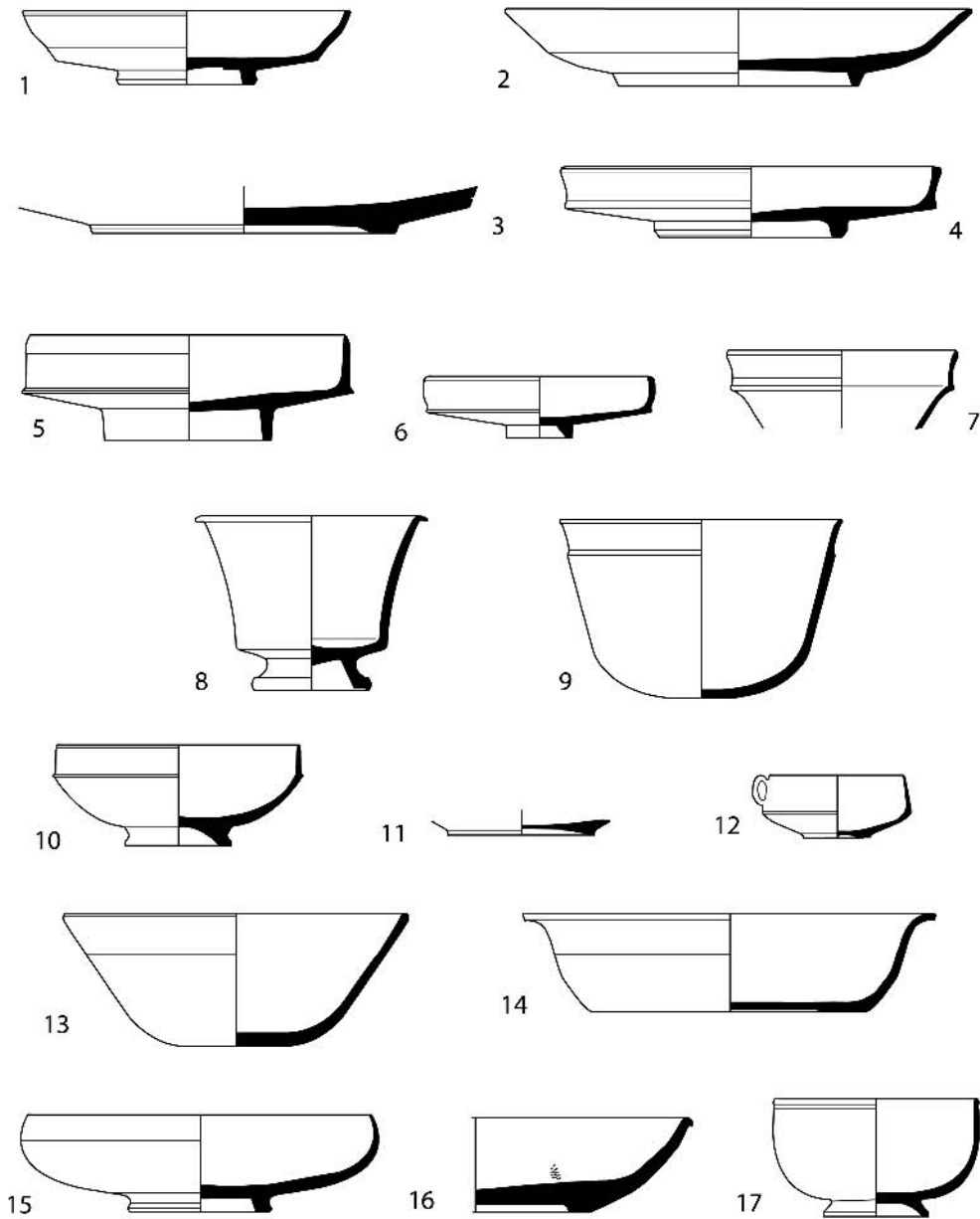


Fig. 12. Ceramics dating from the Roman Period, from selected sites. See Appendix 1 for details.

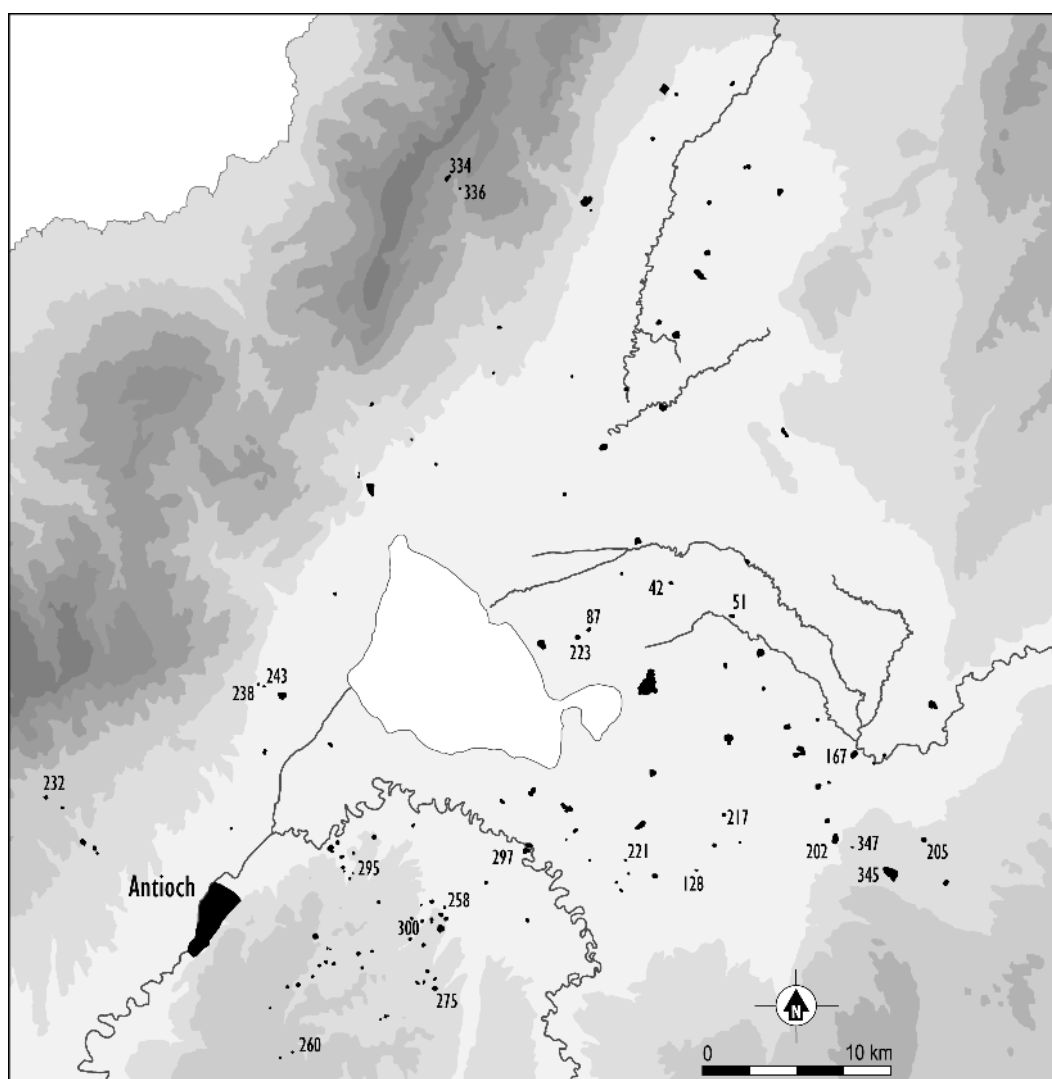


Fig. 13. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Late Roman Period. Numbered sites are discussed in the text.

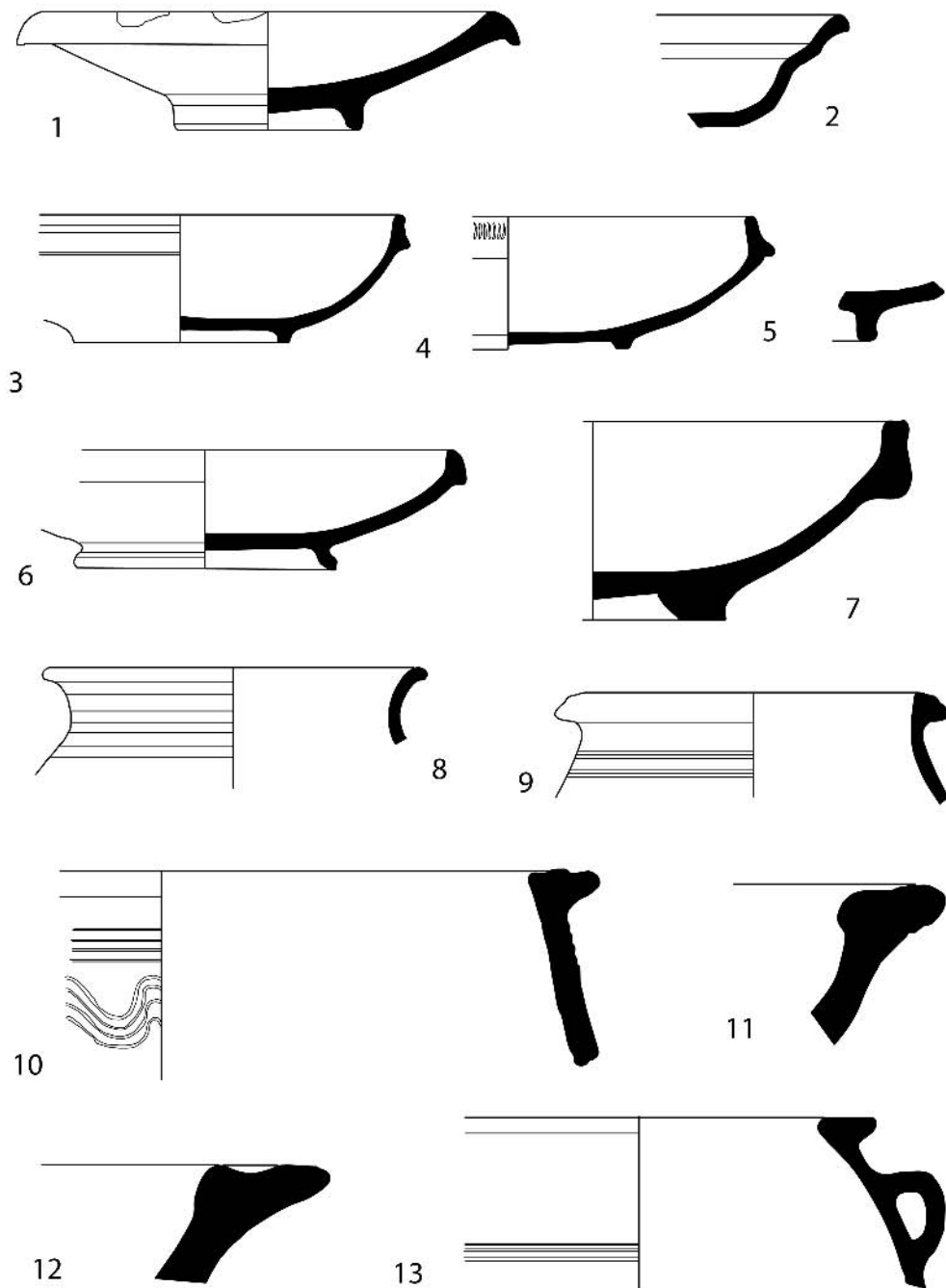


Fig. 14. Ceramics dating from the Late Roman Period (1-7, 13) and Hellenistic and Roman Plain wares (8-12), from selected sites. See Appendix 1 for details.

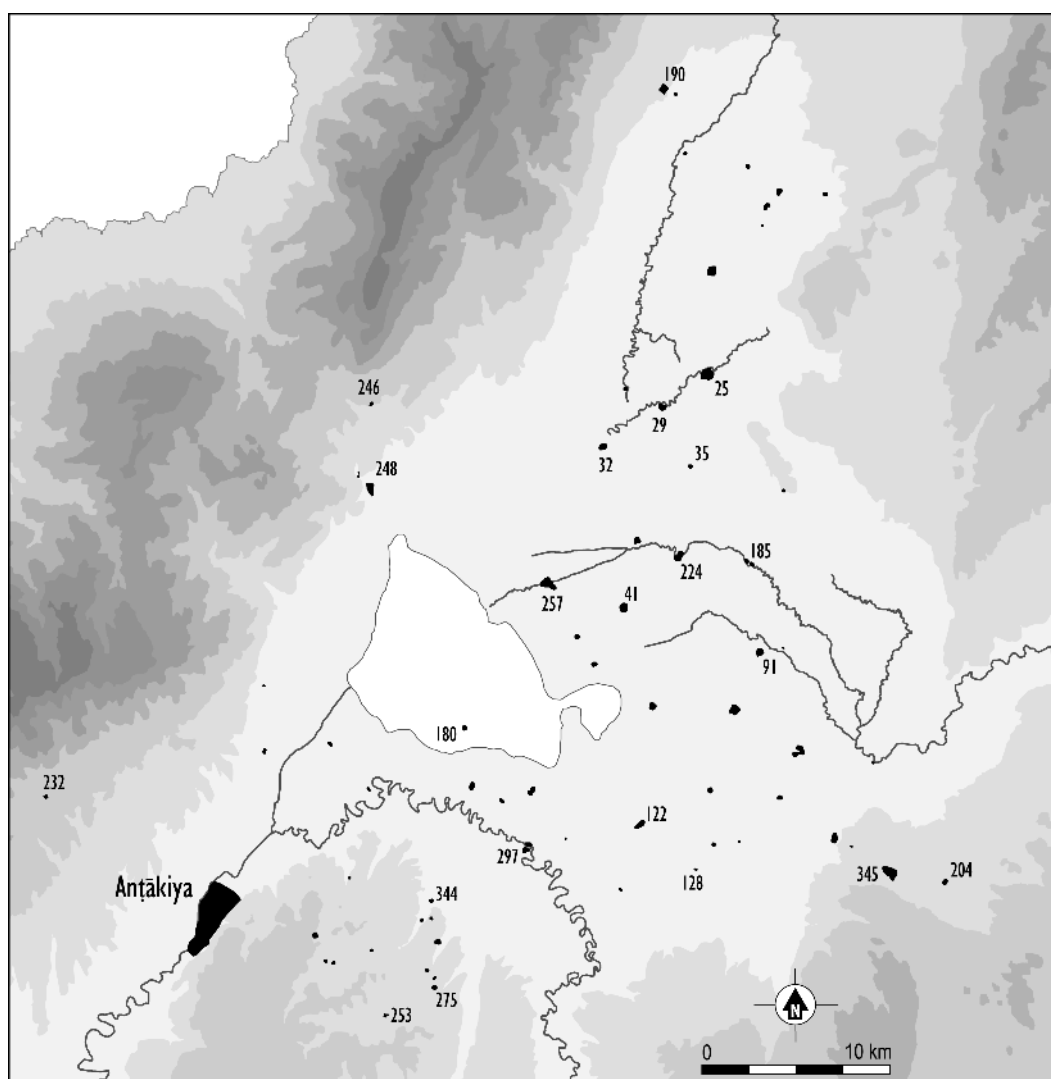


Fig. 15. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Early Islamic Period. Numbered sites are discussed in the text.

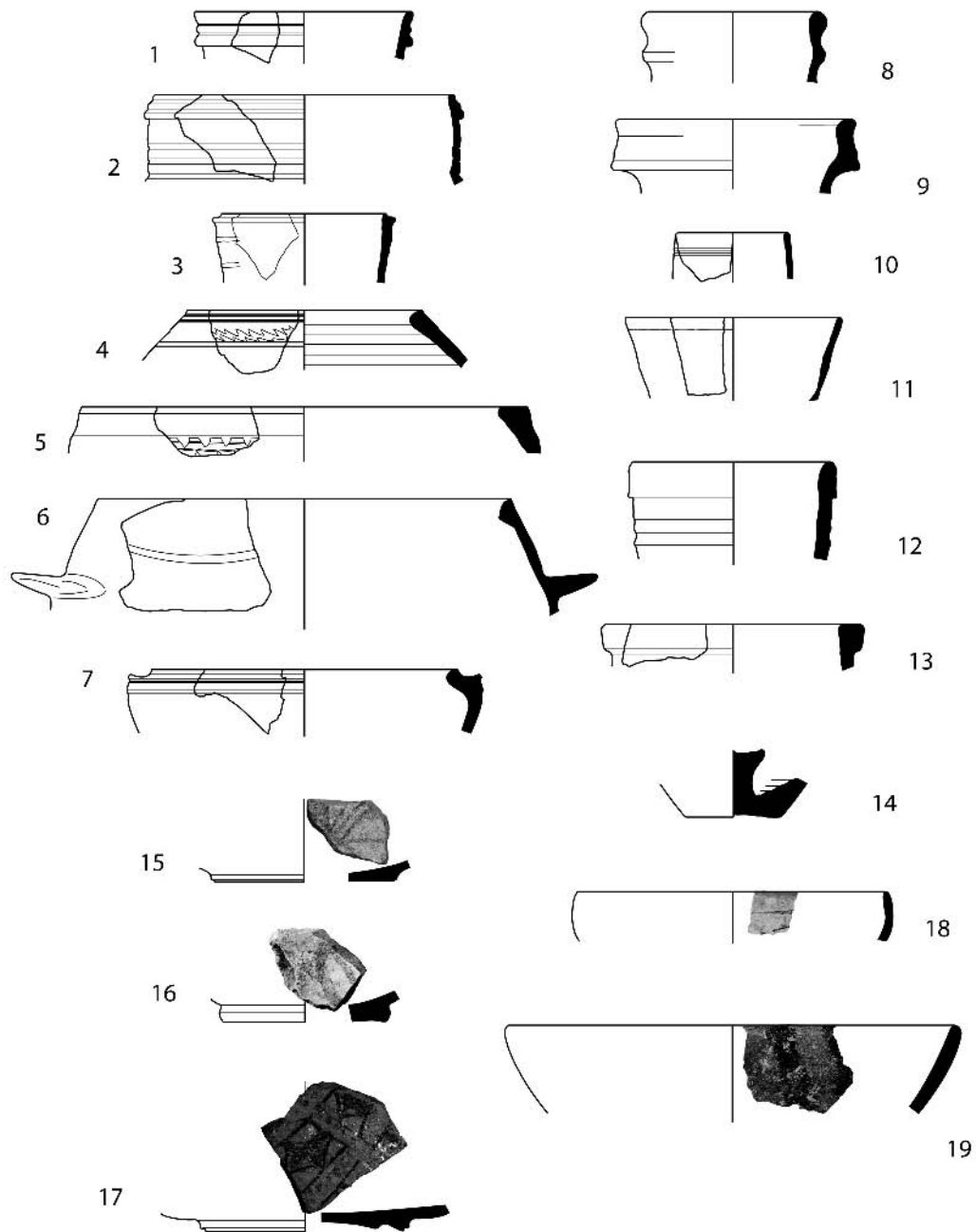


Fig. 16. Ceramics dating from the Early Islamic Period, from selected sites.  
See Appendix 1 for details.



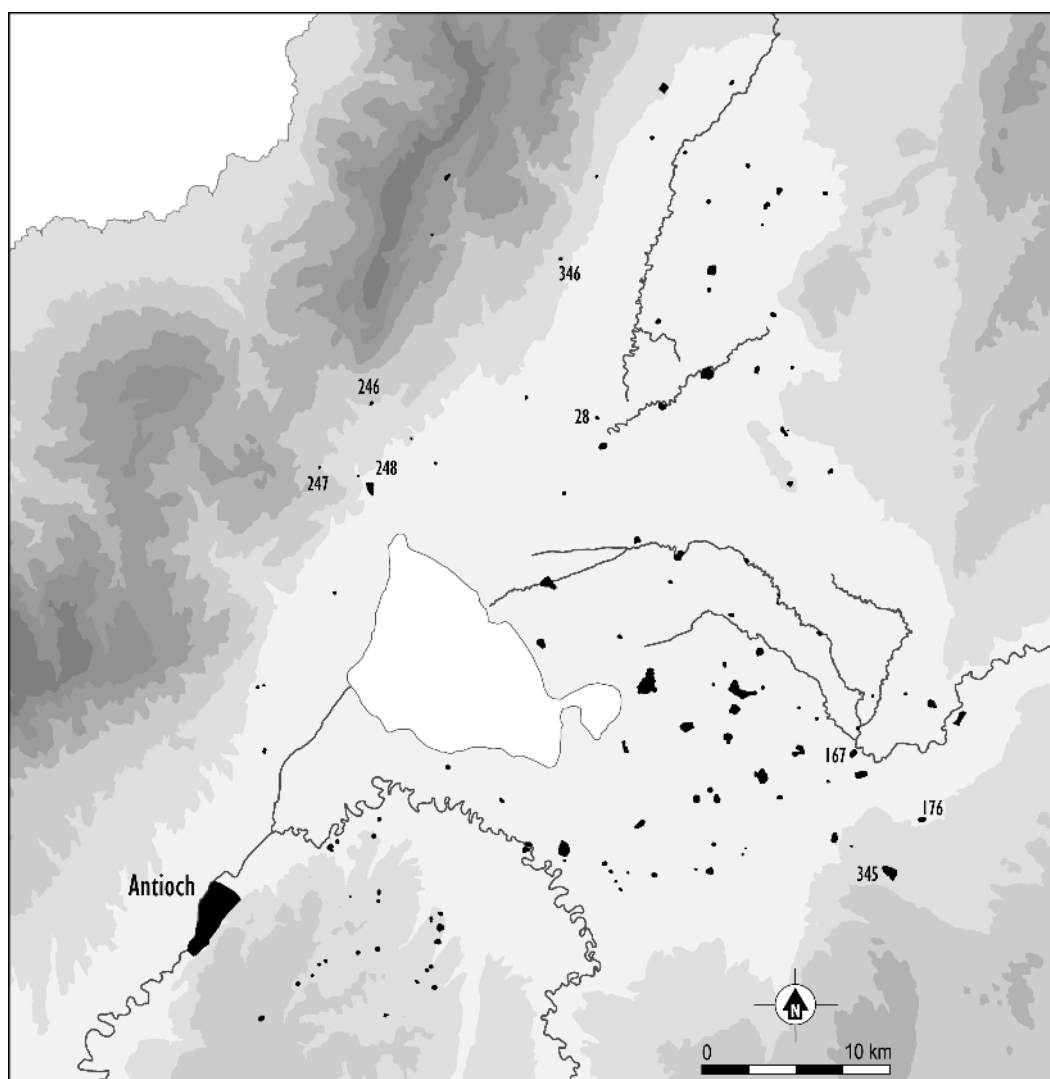


Fig. 17. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Middle Islamic Period. Numbered sites are discussed in the text.

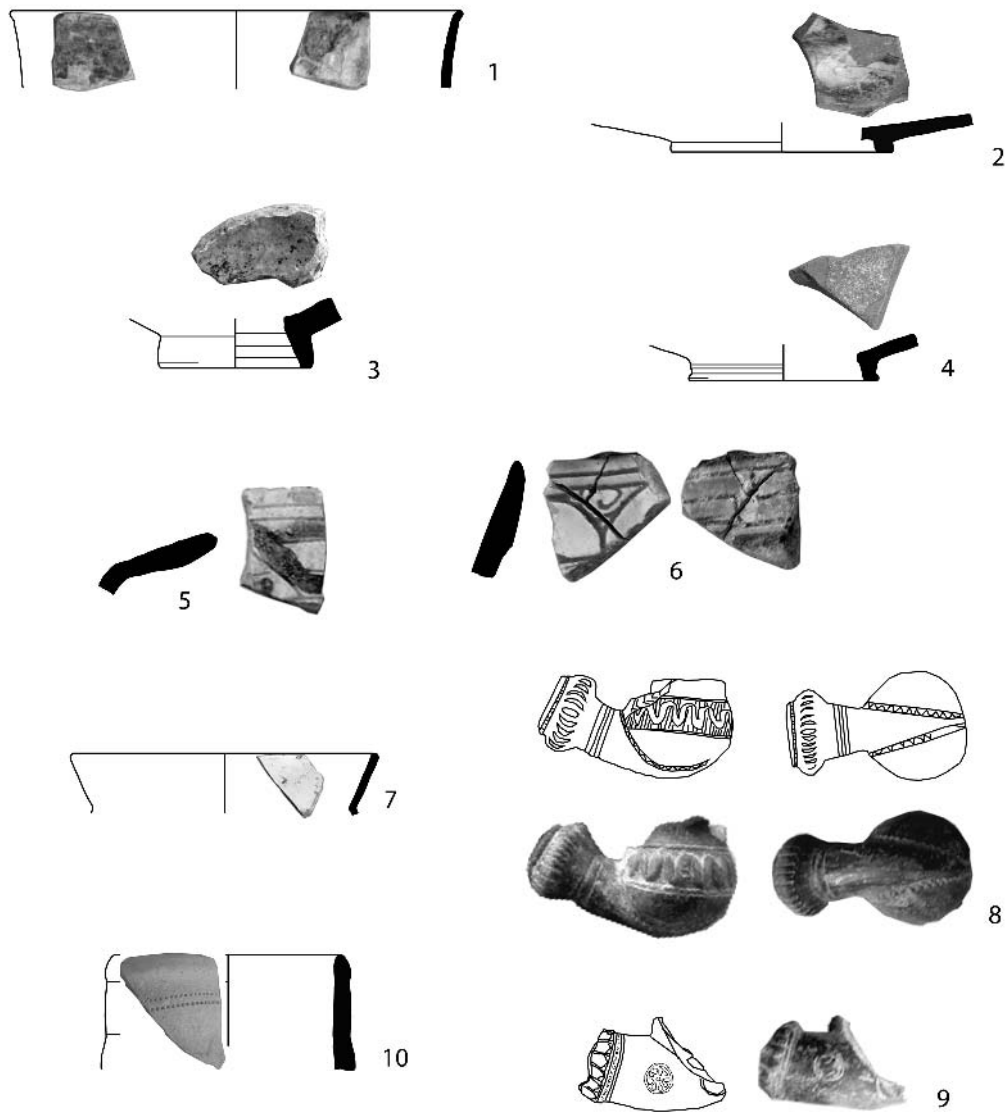


Fig. 18. Pottery dating from the Middle and Late Islamic Period, from selected sites.  
See Appendix 1 for details.

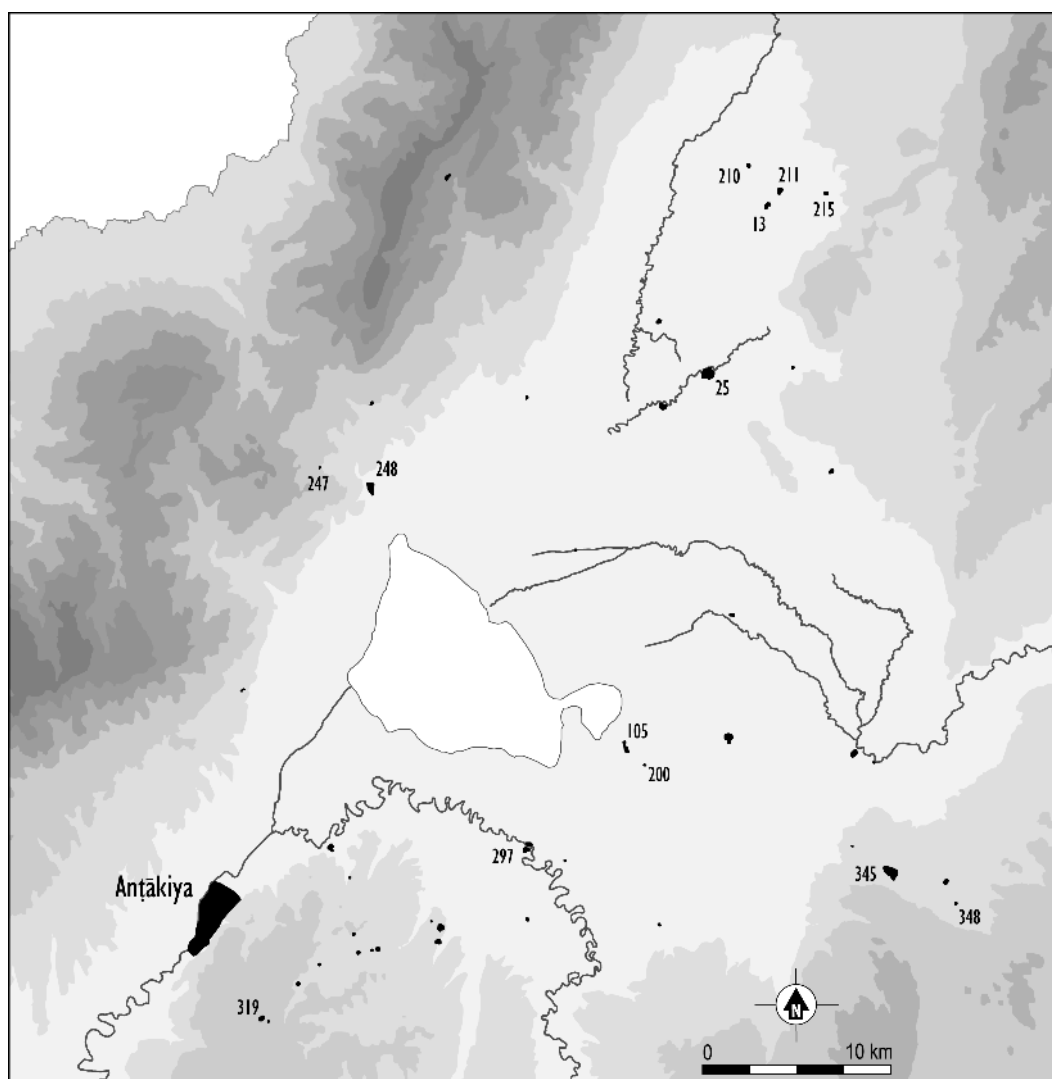


Fig. 19. The Amuq Valley and surrounding uplands, showing sites with evidence for occupation during the Late Islamic Period. Numbered sites are discussed in the text.

## TELL DAMISHLIYYA FAUNAL BONE REPORT

*Anna Russell and Hylke Buitenhuis\**

### *Abstract*

A small faunal assemblage was recovered from the soundings at the small mound of Damishliyya, situated about two kilometres north of Tell Hamman et-Turkman, under the auspices of Amsterdam's Archaeological Mission to Syria in September and October 1984. Tell Damishliyya was discovered during the 1983 Balikh survey and is one of the many sites in Balikh valley belonging to the 7<sup>th</sup> and 6<sup>th</sup> millennia B.C. A total of 1567 fragments were recorded all of which were hand-collected. The surface preservation of the bone material was generally good, although a number of bones showed evidence of modern damage or mineral crystal formation. Species present include sheep, goat, pig, cattle, gazelle, fallow deer, equid, canid, hare and tortoise. Analyses of the faunal remains at Tell Damishliyya have revealed a 7<sup>th</sup> millennium economy primarily based on mixed herds of domestic sheep and goats, with sheep primarily exploited for meat and goats possibly also exploited for milk production. Pigs were the next most common animal, probably also domestic or at least proto-domestic. Wild animals such as auroch and gazelle were present in low but consistent numbers suggesting regular exploitation of these animals throughout the year, if only at very low levels. Other wild animals such as equids seem to have been exploited more sporadically, perhaps representing seasonal exploitation.

### INTRODUCTION

Tell Damishliyya is a small mound measuring about 70 x 60 metres with a height of five to six metres, situated on the west bank of the river Balikh, opposite the village of Damishliyya. Local farmers use the mound as an intake point for irrigation of adjacent cotton fields and irrigation ditches have heavily damaged the southeast section of the site. A small-scale rescue excavation was undertaken in 1984 when it was discovered that building work was to occur at the site. Work concentrated on the south-western side of the mound. Three broad chronological periods were distinguished: Period I (Pre-Pottery Neolithic), Period II (Pottery Neolithic), and Period III (Halaf).

The areas excavated in 1984 consisted of two 10 x 10 metre squares (K 16-K 17) where the main work was concentrated, and a series of narrow trenches 1.5 metres wide (K 19, L 17, M 15, M 16 and M 19) (Akkermans, 1999). Excavation revealed an uninterrupted succession of Neolithic levels with five occupation levels. Only one of the

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I would like to express my gratitude to the Netherlands Organisation for Scientific Research (NWO) for providing the funding for this research as part of my PhD project: Abrupt Climate Change and Cultural Transformation in Syria in Late Prehistory (c. 6800-5800 BC) – Changing Patterns of Animal Exploitation.

Due to limited space individual bone measurements could not be included in this publication but are available on request from Anna Russell.

deepest strata, stratum 2, gave substantial evidence of architecture though later pits and burials had caused a great deal of disturbance. Faunal remains were recovered from all Neolithic strata, i.e. stratum 1 to stratum 7, together with a small number from the Halaf period (Akkermans, 1999). Three  $^{14}\text{C}$  dates are available for Tell Damishliyya, all of which were taken from the large ash pit assigned to stratum 5-7. These dates put the late Neolithic strata at Tell Damishliyya at c. 6600-6400 cal. BC (Akkermans, 1989). Due to the small size of the sample the assemblage will be taken as a whole.

## AIMS AND OBJECTIVES

There are several general and specific objectives in Near Eastern Neolithic archaeology to which the zooarchaeological evidence from Tell Damishliyya can contribute. The main aim of this report is to develop an understanding of the morphology and function of this site in the Pottery Neolithic. In particular, the zooarchaeological analysis can contribute to the following specific objectives:

- To study the faunal data in terms of economic practices;
- To explore key indicators of economic and social activity and to examine animal husbandry and its role in the site economy in the Pottery Neolithic;
- To study evidence for presence of domesticates;
- To study evidence for continuity and change in economic use of animals;
- To place our understanding of this site in the regional context.

## METHODS

All the bone material recovered from Tell Damishliyya was excavated by hand with no sieving performed. As a consequence, retrieval will have generally favoured the larger anatomical elements from the larger species. Vertebrate material was recorded directly into a computerised database using Microsoft *Access* software. The database consists of a series of interlinked forms and tables built for the recording of faunal assemblages. Every fragment was recorded with the following variables in mind: levels of surface preservation, levels of fragmentation, whether new breaks were present, presence/absence of gnawing, burning and root etching.

Identification of the material was carried out at Leiden University. It can be difficult to distinguish some closely related taxa; for this study the following elements were used for separation as they are thought to have the most reliable criteria. For caprines the lower deciduous 3<sup>rd</sup> and 4<sup>th</sup> premolars (Payne 1985), distal humerus, distal metapodials, astragalus and calcaneum (Boessneck, 1969) and distal tibia (Kratochvil, 1969) were used. The techniques used to distinguish between sheep/goat of Hijlke Buitenhuis (*per comms.*) were also used to help differentiate between sheep and goat. For equids the shape of the enamel folds were used to differentiate species (Davis, 1980), as was the slenderness index of the metacarpal (Brauner, 1916).

The bone material was recorded using the zoning method of Cohen and Serjeantson (1996) and Serjeantson (1996). This method involves the use of zones i.e. each bone is split into clearly defined segments labelled with a number. When recording a bone you list the segments/zones present i.e. 123.

Information on the presence of gnawing and burning, and details of pathology and butchery were recorded for each bone. Butchery marks were described by type (i.e. chop, cut, sawing). Pathologies were categorised and described where appropriate.

Sexing using morphological characteristics was attempted for all species where possible. The shape of the pig canines (and their alveoli) was used to differentiate boars from sows. The presence of canines in equids was used to identify males. Cattle and sheep/goat pelves were used to distinguish males and females where possible.

Information on the state of epiphyseal fusion was collected for all long bones and was recorded using a number of categories: fused, fusing (fusion line still visible), ossified, porous, and unfused (Silver, 1969). The presence of juvenile and neonatal bones was noted in addition. Analysis of fusion data was undertaken using the categories of O'Connor (1989).

Mandibular tooth wear stages were recorded from the dP4, P4, M1, M2, and M3, for both loose teeth and those in mandibles. Cattle and pig teeth were recorded using the system of Grant (1982), whilst for caprine teeth the criteria for Payne (1973, 1987) were followed.

Measurements mostly follow von den Driesch (1976), with the exceptions noted below. Measurements of cattle and caprine teeth were the maximum length and width of the given tooth. Measurements of equid cheek teeth follow Davis (1987). Pig tooth measurements follow Payne and Bull (1988). Once data are divided up between different species, phases of occupation, body parts and types of measurements only very small samples may be available. One way to overcome this problem is to merge different measurements of the same species on the same scale (widths, lengths and breadths) (Albarella, 2002). The log ratio technique first introduced by Meadow (1981) is the most commonly used of these scaling techniques and will be the method used here. This method uses the decimal log ratio between the 'standard' and the actual measurement (Albarella 2002).

## ASSEMBLAGE OVERVIEW

A total of 1567 fragments of faunal remains were recovered during excavation. Of these 1489 were from vertebrates and 78 were from mollusc species. All bones were hand collected. Of the assemblage 57.2% could not be assigned to species level leaving 637 vertebrate bone fragments that could be recorded to species and element level.

## **Preservation, fragmentation and other taphonomic factors**

The general surface preservation of the assemblage was good with 72% of the fragments recorded as having good surface preservation (see figure 1). The bones



displaying the best surface preservation originated from stratum 1 and 3. Stratum 2, stratum 4 and those strata above are less well preserved with more fragments being recorded as displaying moderate or poor surface preservation. The poor preservation in stratum 2 appears to have been caused by the building in this stratum being levelled after its abandonment, creating a flat surface of compact mud brick (Akkermans, 1989). This obviously affected bone preservation in this area. The poor preservation in later strata (i.e. 4,5,6,7, Halaf) is presumably caused by the proximity of these levels to the modern surface of the mound. In all the strata the percentage of bones recorded with good surface preservation is over 50%, with the exception of the topsoil.

The degree of fragmentation of the faunal assemblage from Tell Damishliyya was recorded in terms of the percentage of the bone present (table 1). The vast majority of bones in all phases were only 0-20% complete, many with modern damage. Often bones fragment very easily when exposed in excavations. Those bones preserved above 80% complete are almost exclusively small compact elements such as astragali, calcanei and phalanges. There are no clear temporal differences in fragmentation.

Evidence of scavenger gnawing was recorded for each bone in the sample. The level of bone gnawing was very low. Only 12 bone fragments showed any sign of gnawing, less than 1% of the vertebrate assemblage. Of these fragments, nine showed signs of canid gnawing and three of rodent gnawing. Such a low proportion of bones showing signs of gnawing suggest that either bones were rapidly covered, and therefore not available to scavengers, or that scavengers such as canids were very rare. The sample too small to look at temporal changes in gnawing levels.

Less than 1% of the vertebrate assemblage showed any sign of burning with 11 fragments showing signs of burning and one fragment being singed. Unfortunately the sample too small to look at temporal changes in burning levels.

All worked bone was removed at the time of excavation and will therefore not be discussed here.

#### RELATIVE IMPORTANCE OF SPECIES

Table 2 gives a complete list of species present in the Tell Damishliyya assemblage. Due to the assemblage being hand-collected, the bones of larger animals are probably over-represented. The main species present are sheep, goat, pig, cattle and gazelle. Other species such as fallow deer, equid, hare, canid, and tortoise were present in far lower numbers. Caprines dominate the assemblage in all phases with suid the next most frequent taxa.

#### Phase

Seven Neolithic strata produced the majority of the faunal material, but material was also retrieved from the Halaf period and the Roman period. Only the Neolithic data and Halaf data will be analysed in this report. 17.4% of the assemblage came from unstratified, topsoil or mixed contexts and these bones are omitted from this study. Only

433 bones that could be recorded to species level were from secure contexts (see table 2). The sample size from most strata is very small and ranges from 4 to 145 bone fragments. In all strata ovicaprid is the most common taxa. In stratum 2, 3 and 4 suid is the second most common taxa, this changes in stratum 5 where there were no suid remains recorded and we see an increase in proportions of ovicaprids.

Looking at the unidentified material (table 2) it is apparent that the proportion of unidentified large mammal fragments to identified large mammals (2.3:1) is far higher than that of unidentified medium mammals to identified medium mammals (1:1). From this we can conclude that large animal bones were more fragmented making identification to species more difficult. The greater fragmentation of large mammal bone probably results from their being exploited for marrow.

Species proportions from bone weights show a slightly different picture than species proportions from NISP values (see tables 2 and 3). When comparing species by bone weight it is clear that cattle are more significant. A cattle carcass produces five times as much meat than an ovicaprid.

## Area

### *Neolithic Ash Pit (Stratum 5-7)*

In the large Neolithic ash pit recorded at this site the proportion of equid remains was very high (25%) compared to all other phases (see figure 3).

If the equid bones are excluded then the other species proportions still show significant differences to the rest of the assemblage, the main difference being the lack of suid remains in this feature. Cattle remains are also better represented in this feature than other strata. The presence of the equid bones in the ash pit could represent the result of a equid herd hunt; the excess meat being preserved through smoking, the smoking process itself causing the ash production. All interpretations of the faunal remains from this feature are tentative as this is a particular feature type, which is not directly comparable to the other floor level contexts at the site.

## Ovicaprid

At Damishliyya ovicaprids constitute over 80% of the vertebrate assemblage and dominate the assemblage in all phases, but particularly in phase 5.

### *Sheep and goat separation*

The identification of the ovicaprids to species level i.e. *Ovis* or *Capra*, was attempted on all elements, of which 42 were positively identified as sheep and 27 to goat. The ratio between sheep and goat appears to remain fairly constant in all phases at around 1.5:1 (see table 2). Sample sizes are too small to explore sheep:goat ratios in any depth. Sheep and goats are often herded together but identification to species is important as they possess different environmental tolerances, reproductive characteristics, carcass quality and range of secondary products (Halstead and Collins, 2002). The discussion that follows will in general take the ovicaprids as a whole due to small sample sizes.

Interpretation of sheep and goat separately will be undertaken where possible and appropriate.

### *Body Part Distribution*

All areas of the body are well represented apart from parts of the axial skeleton such as vertebrae and ribs, which are notoriously difficult to assign to species (with exception of the axis and atlas). Denser elements such as the humerus and tibia are better represented than the more friable elements such as the femur (see figure 4). There does appear to be some stratum differences with scapula, pelvis and metatarsal proportions particularly high in stratum 2. In all strata there is a general paucity of small elements such as phalanges, which could suggest a retrieval bias for the larger elements. The femur, a major meat bearing bone, is also generally absent. This could suggest that this bone was selectively removed and disposed of elsewhere. However, as mentioned above, the femur has a relatively low structural density and its relative absence could be the result of taphonomic processes. Looking at body part distribution in terms of available meat weight (figure 4), it is apparent that there are greater numbers of high meat weight bones present. This suggests that primary butchery was undertaken elsewhere with low meat weight bones being discarded outside the centre of the site. Only high meat yield bones seem to have been processed in the areas excavated.

### *Butchery*

Butchery marks are present on 4.6% of ovicaprid bone fragments from the Neolithic and Halaf phases. All butchery marks were fine cuts probably made by a flint knife. The majority of marks were centred around the elbow joint and occurred on the distal humerus, proximal radius and ulna. There were also cut marks on the distal diaphysis of the metapodia and on the astragalus and distal tibia (see figure 5). These marks are all classic of disarticulation and skinning marks. The low percentage of butchery marks present suggests a refined form of butchery that left very few marks on the carcass skeleton.

### *Ageing*

The age structure of the ovicaprids was calculated on the data from stratum 1-7 and the combined in order to bypass the limits of a limited sample size per stratum. Postcranial fusion data from the Halaf phase were separated despite the small sample size as differing animal exploitation practices may be present in this later period. Over 80% of early fusing (3-16 months) elements are fully fused indicating that most animals were surviving to around one year of age in the PN period. The proportion of fully fused elements from the 'middle' category is lower (*c.* 70%) but still includes the majority of individuals. In the late fusing category approximately 50% of bones are fully fused indicating that few individuals reached 30 months or over. The proportion of unfused earlier fusing elements fits with the natural mortality rates of new born animals which is true of both past and modern populations. Altogether the postcranial fusion data infers that the majority animals were culled between 12 and 30 months of age *i.e.* prime meat age. The sample from the Halaf period is very small (*n*=9) and as such it is difficult to

analyse the mortality profile. All early fusing elements (n=8) were fused, possibly indicating a later age of slaughter.

Ageing date derived from toothwear patterns (figure 6), corroborates the postcranial fusion data. The greatest mortality rate lies between 6 months and 1 year of age, mortality then levels off with the rest of the surviving animals living to 3 years or older. This suggests a herd predominantly exploited for meat production, although the survival older animals could have been exploited for secondary products such as milk. In a milk-producing herd one would however expect to see higher proportions of neonatal animals. The lack of neonatal remains could on the other hand be a result of taphonomic processes, which can easily completely destroy the more fragile neonatal bones and teeth.

When comparing the mortality curves of sheep and goats it is clear that these two species were managed differently. The mortality profile of goats shows many animals living beyond two years of age. Goat meat from older animals is not very palatable which suggests that these animals were kept alive for other purposes i.e. secondary product production. Goats are very good milk producers. The mortality profile of sheep is very different, with most animals being culled before they reached one year of age. This implies that sheep were kept only for meat production, the majority of animals being killed at a prime meat age of one year, and only a few animals being kept as a breeding population. The sheep/goat mortality profile is more similar to that of sheep so it can be assumed that most of these animals are sheep and not goats. This is somewhat contrary to apparent 1:1 ratio seen from identified ovicaprids. Only one tooth wear stage was derived from the Halaf (Payne wear stage E) and this is included in the PN age profile.

### *Pathology*

Only one fragment showed any signs of pathology; this was a metacarpal from stratum 2/3. This bone displayed a circular area (diameter 6.3 mm) of tiny pitting, suggesting a surface infection.

### *Biometry*

The ovicaprid bones provided a number of measurements. Individual measurements are available on request.

The element that provided the most measurements was the distal humerus. The Bd (breadth of distal end) and BT (greatest breadth of trochlea) were plotted to give an idea of the size of the animals (see figures 7 and 8). The goat humerus is clearly separated out from the other ovicaprids and it is likely that the sheep/goat bones are in fact sheep. If this is the case then the sheep appear to be separated into two groups which could either denote wild versus domestic or male versus female. The measurements from Damishliyya were plotted against measurements from modern reference collections of *Ovis orientalis* (wild sheep) and *Capra aegregharus* (wild goat) (Buitenhuis, *per comms*) to determine if the ovicaprid from Damishliyya are wild or domesticated (figure 7). The goats from Damishliyya are obviously far smaller than wild goats, this together with the fact that wild goats are not indigenous to the region, allows us to suppose that the goats at Tell Damishliyya are certainly domestic. It would be highly unusual to find wild goats in this area at this time. The sheep from Damishliyya fit within the lower spectrum of wild sheep

measurements, which fits nicely with a herd of sheep in the early stages of domestication. We can therefore assume that both sheep and goats were domesticated at Damishliyya. The next aspect of the data to investigate is determination of sex. The measurements from the sheep of Damishliyya were plotted with wild sheep of known sex to see if there was a sex separation (figure 8). There does appear to be two groups of individuals; eight falling into a more female size range and five falling into a more male size range. The sex ratio of 1.6 females to 1 male fits with an early form of husbandry.

### *Log Ratios*

As so few measurements were available, the data was grouped into widths, lengths and depths and log ratios calculated. The log ratio technique first introduced by Meadow (1981) is the method used here. This method uses the decimal log ratio between the 'standard' and the actual measurement (Albarella 2002). The log ratio of bone width, length and depth measurements will be analysed here for sheep measurement (it is now assumed that all sheep/goats recorded from Damishliyya are in fact sheep, see above). The standard used is that of a wild female sheep (available on request). The log ratio diagrams show that almost all measurements from Damishliyya are from smaller individuals than the standard (figure 9). This suggests that the sheep from Damishliyya are domesticated and have undergone some size reduction compared to their wild counterparts. Size reduction is one of the many signals of domesticated animals. This confirms the results seen in the humerus BT and Bd measurements.

### **Suids**

Suids are the second most common taxa at Damishliyya consisting 12% of the top five species (ovicaprid, suid, cattle, gazelle, equid) taking all strata together. Proportions of suid are highest in strata 2 – 4 and the Halaf. This is surprising as this in itself suggests a moister climate than expected for this area at this time. The lack of suid remains in stratum 5 and 5/7 (ash pit) is intriguing. This could suggest a change in environmental to drier conditions; suids prefer moist, wooded environments such as river valleys

### *Body Part Distribution*

Due to the small size of the sample it is difficult to analyse body part distribution; it does however appear that skull and mandible fragments are more common than appendicular parts of the skeleton although this could be entirely due to taphonomic factors.

### *Butchery*

Only 2 butchery marks were recorded on suid bones, both heavy cuts on the atlas bone. This mark was probably caused whilst removing the head.

### *Ageing*

Very few teeth and only one mandible with ageing information were recovered, those recovered were of younger animals. The sample of bones with fusion data is equally

as small but indicates that the majority pigs died before they reached 12 months of age as c. 60% of early fusing elements and over 70% of later fusing elements were unfused at the time of death. From the small amount of ageing data available it appears that the suid population consisted of young individuals but this is to be expected in both wild and domestic populations. The natural rate of juvenile mortality is high in the wild as pigs produce large litters and in domestic stock pigs are culled at a young age for their meat.

### *Biometry*

Very few measurable elements of suid were recovered (measurements available on request). Comparing the suid measurements from Damishliyya to wild boar standard measurements (Hongo and Meadow, 1998; Mayer *et al.*, 1998), it is clear (with the exception of the calcaneum) that the animals at Damishliyya are smaller than wild boar (table 4). It can therefore be assumed that these animals were domestic. The large size of the calcaneum does however imply that wild animals were still present.

### **Cattle**

Remains of cattle were relatively rare at Tell Damishliyya (n=31), although the proportion of unidentified large animal (ULM) remains suggests that there were more cattle remains present than could be identified. 98% of the ULM fragments were preserved to only 1-20% completeness, which greatly inhibits the identification of these fragments to species level. It is likely that many of the cattle bones were broken open for marrow extraction leading to this high fragmentation rate.

Cattle bones make up only 7% of the top five species (ovicaprid, suid, cattle, gazelle, equid) in total (figure 2). There is some fluctuation of cattle proportions seen between the stratum with proportions highest in stratum 1 (although this is from a very small sample), and the Neolithic Ash Pit (stratum 5-7). No cattle remains were uncovered from the Halaf stratum.

### *Body Part Representation*

Due to the low number of cattle remains, it is once again difficult to analyse skeletal element distribution. All elements are present only at very low levels apart from the mandible. Of the appendicular skeleton, the humerus is the best represented element.

### *Ageing*

Only very limited ageing data is available which does not allow analysis of the population.

### *Biometry*

No measurable elements were recovered.

## Other animals

### *Equid*

Only ten equid bone fragments were recovered, seven of which were from the large Neolithic Ash Pit in stratum 5-7 dated to c. 6600 – 6400 cal BC. The elements recovered include three humeri, three pelves, one calcaneum, one metatarsal and one 2<sup>nd</sup> phalange. The relatively high presence of equid bones in the large Neolithic Ash Pit is discussed in more detail in the Area section. There are at least two individuals represented in this feature.

### *Gazelle*

Only eight gazelle bone fragments were recovered; four from stratum 2, one from stratum 3, and three from stratum 5. Elements recovered include one horncore, one atlas, three humeri, two metacarpals and one calcaneum.

### *Fallow Deer (Dama mesopotamica)*

One fallow deer humerus (right) was recovered from stratum 4. Two species of fallow deer are found in the Near East: *Dama mesopotamica* (the Persian fallow deer) and *Dama dama* (the European fallow deer). Due to the geographical location, it is likely the *Dama* specimen from Damishliyya is that of the *mesopotamica* sub-species.

### *Roe Deer*

Two possible roe deer bone fragments were recovered, a right ulna from stratum 2, and a left humerus from stratum 4 which could also possibly be gazelle.

### *Canid*

Only one fragment of canid remains was identified; a piece of right occipital from a dog/wolf uncovered from the Neolithic Ash Pit (stratum 5-7).

### *Hare*

One hare bone fragment was recovered, a right radius from stratum 3. Hares were probably hunted opportunistically for their fur.

### *Tortoise*

One fragment of the carapace was recovered from stratum 7.

### *Small Rodents*

14 fragments of gerbil species were recovered from stratum 2. These could all belong to one individual. Gerbils are digging animals and can dig deep into the ground; as such these animals could well be intrusive.



## Molluscs

65 fragments of molluscs were found, the majority of which came from the Neolithic Ash Pit (stratum 5-7) (table 2). The molluscs were identified with the help of Prof. Dr. E. Gittenberger from the Naturalis Museum, Leiden. *Melanopsis praemorsa* (a freshwater snail) is present in all strata from stratum 3 and above. *Melanopsis costata* is less common. In the Neolithic Ash Pit mollusc remains are far more common than in all other strata. The most common mollusc in this feature is *Unio tigridis* a species of freshwater mussel, found living buried in mud, silt or sands in rivers, streams and lakes. The presence of so many mollusc remains in this pit suggests the purposeful deposition of these remains in this feature, perhaps due to secondary deposition of rubbish. Any analysis of this feature must however be tentative as there are no similar contexts at the site.

## DISCUSSION

Analysis of the faunal remains from Tell Damishliyya revealed the presence of a reasonably broad array of species. The assemblage is dominated by ovicaprids, particularly sheep although goats were also important. It appears that the sheep were domesticated although animal husbandry of sheep does not appear to go beyond meat production. The goats were also certainly domesticated; wild goats are not expected in this area. Although goats were not present in as high numbers as sheep, age profiles suggest that they were kept for secondary products such as milk. Goats are known to be much better milk producers than sheep. These animals were probably kept in a mixed head, as they are still today in this region.

The next most common species was surprisingly pig, those bones that were measurable mainly falling into the domestic size range. It is likely these animals were kept within the settlement and killed when young for meat.

The small sample size of cattle bones, the heavy fragmentation and therefore lack of measurable elements means that it is impossible to say whether these animals were domestic or wild. A few fragments were however noted as being 'large' which, together with the general absence of cattle from the assemblage, suggests the cattle at Damishliyya were wild in origin, and probably hunted opportunistically.

Gazelle accounts for 2% of the top five species (ovicaprid, pig, cattle, gazelle, equid), the same proportion as equid. It appears that these steppe animals were not hunted often and provided only a small supplement to the diet.

The consistent presence of both cattle and gazelle at Damishliyya suggests that these animals were regularly hunted and exploited throughout the year, if only at low levels. Equids appear to have been exploited more sporadically, perhaps representing seasonal exploitation. Other wild animals such as fallow and roe deer were also apparently occasionally hunted as were smaller animals such as the hare. The presence of steppe animals (equid and gazelle) and animals that prefer moister, wooded areas (auroch, fallow deer and roe deer) suggests that the people at Damishliyya hunted animals from a

range of environments. The Balikh River valley would have been a fertile environment supporting varied plant and animal life. There were probably far more trees than we see today which could have supported populations of fallow deer, roe deer and auroch. The people at Damishliyya also exploited the nearby Balikh River, fishing for freshwater molluscs.

### **Tell Damishliyya in a regional context**

Although Tell Damishliyya is only a small site with a very small faunal assemblage it remains an important site due to the lack of excavated and/or analysed sites in the area. There are precious few faunal reports of this period in this area of the Near East, making the faunal analysis from Damishliyya an important addition. In particular this analysis will be used in comparison with the early pottery levels at site of Tell Sabi Abyad, currently being analysed.

#### *Tell Assouad*

Tell Assouad is a site situated in the Balikh, approximately 20 kilometres from the Syro-Turkish border and c. 10-12 kilometres to the north of Damishliyya. This site dates to the same time period as Tell Damishliyya and is therefore one of the few sites available for comparison. 815 identifiable bone fragments were uncovered during a sondage undertaken in 1969 led by J. Cauvin (Helmer, 1985). Excavations revealed no architecture, only a sequence of settlement layers.

Like practically all 7<sup>th</sup> millennium sites in the Near East, the faunal assemblage at Tell Assouad is dominated by ovicaprids (68.7% of the top 5 species). Of these ovicaprids 34.6% were identified as goat and 25.8% were identified as sheep. Both the goats and sheep are thought to be domestic species (derived from size comparisons and horncore shape). This mirrors that seen at Damishliyya. Pigs at both sites are thought to be proto-domestic although small sample sizes inhibit analysis at both sites. Cattle at both sites show no signs of domestication and are probably *Bos primigenius*.

There are a few clear differences between the species proportions at these two sites (figure 10). Tell Assouad has a far higher proportion of gazelle present than at Damishliyya. This appears to be due to an increase in gazelle proportions in the VI and V levels at Tell Assouad which is attributed to a new group of humans occupying the site at this time (Helmer, 1985) although this assumption should be approached with scepticism due to some problems with stratigraphy at this site. Another difference is seen in the proportion of pig, which is higher at Damishliyya. Using the Chi Squared test these two sites are significantly different in terms of species proportions ( $\chi^2=64.1$ ). This considerable difference derives from the proportions of gazelle at these sites. Despite these sites geographical proximity it appears animal exploitation was quite different in certain respects. Why this is the case is an intriguing question. It appears that people at Tell Assouad relied more heavily on hunting wild gazelle and people at Tell Damishliyya on domestic ovicaprids suggesting that settlements in this area were to a certain extent quite individual with differing subsistence strategies.

*Tell Sabi Abyad*

The site most comparable to Tell Damishliyya is that of Tell Sabi Abyad. This site is only a few kilometres north Tell Damishliyya and spans contemporary phases. Tell Sabi Abyad is located in the upper Balikh region of northern Syria. The site is situated approximately 30 kilometres from the Syro-Turkish border and about two kilometres south of the modern village of Hammam et-Turkman. Tell Sabi Abyad is part of a cluster of mounds, locally known as Khirbet Sabi Abyad, dating back to the 7<sup>th</sup> and 6<sup>th</sup> millennium B.C. Work on the bones from the PN at Tell Sabi Abyad I by the author are currently in progress and will certainly add a wealth of data and valuable information to discussions about this little understood period.

**Tell Damishliyya in the wider context**

Tell Damishliyya fits into the very small group of early pottery Neolithic sites of Northern Syria. There are very few comparable sites, even fewer with analysed faunal remains. As so little is known about the cultures in this area Damishliyya an important site; it adds to what we know about animal husbandry at this time, the progress of animal domestication and the extent to which wild animals were exploited. Tell Damishliyya displays key differences to nearby sites such as Tell Assouad, posing more questions about animal exploitation at this time.

**SUMMARY**

Analyses of the faunal remains at Tell Damishliyya have revealed a 7<sup>th</sup> millennium economy primarily based on mixed herds of domestic sheep and goats, with sheep primarily exploited for meat and goats possibly also exploited for milk production. Pigs were the next most common animal, probably also domestic or at least proto-domestic. Wild animals such as auroch and gazelle were present in low but consistent numbers suggesting regular exploitation of these animals throughout the year, if only at very low levels. Other wild animals such as equids seem to have been exploited more sporadically, perhaps representing seasonal exploitation.

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Phase	1-20 %	21-40 %	41-50 %	51-60 %	61-70 %	71-80 %	81-90 %	91-100 %	Total
1	97.1%	2.9%							69
2	92.8%	3.1%	0.4%	0.4%		0.9%	1.3%	0.9%	223
2/3	66.7%	16.7%	16.7%						6
3	84.0%	7.1%	2.7%	1.3%	0.9%	0.9%	0.4%	2.7%	225
4	90.0%	4.4%	1.1%	2.2%				2.2%	90
5	97.7%	0.5%	0.5%			0.9%		0.5%	213
5/6	88.2%	5.9%						5.9%	17
5-7	84.0%	10.0%			4.0%	2.0%			50
7	95.7%	4.3%							47
Halaf	81.5%	11.1%					3.7%	3.7%	54
Mixed	69.1%	29.1%						1.8%	55
Mixed Halaf	85.7%							14.3%	7
Roman	75.0%	6.3%	12.5%	6.3%					16
Topsoil	83.3%	16.7%							6
Unstrat.	71.8%	10.7%	2.0%	0.7%	0.7%	0.7%	8.7%	4.7%	149
Total	87.2%	6.4%	1.2%	0.7%	0.4%	0.7%	1.5%	1.9%	1227

Table 1: Bone completeness: percentage of bone present.

<i>Common name</i>	1	2	2/3	3	4	5	5/6	5-7	7	HALAF	MIXED	MIXED	ROMAN	TOP- SOIL	UNSTRAT	Total	<i>Total Species Proportion</i>
Sheep	1	2	1	7	3	4	1	1	1	3	14				4	42	6.59%
Goat		5	1	8	2	1	1	1		2	2		1		3	27	4.24%
Sheep/Goat	12	33	2	78	22	53	9	11	5	7	20		1	3	39	295	46.31%
Medium Ungulate	3	22		37	10	3		5		7	7		1		11	106	16.64%
Pig	1	14	27	8		2	2		4	4	4			1	6	67	10.52%
Cattle	4	4		13	2	4	1	3			2	1			5	39	6.12%
Gazelle		4		1		3					2				2	12	1.88%
Fallow deer					1											1	0.16%
Gazelle/Roe Deer?					1											1	0.16%
Roe deer?		1														1	0.16%
Equid					1	1		7		1				1	1	12	1.88%
Hare				1												1	0.16%
Dog/Wolf								1								1	0.16%
Small rodent		14													17	31	4.87%
Tortoise									1							1	0.16%
Total	21	99	4	172	50	69	14	29	7	24	51	1	3	5	88	637	100.00%
Unidentified																	
UUU	2	14		3	31	54	1	2	21	1	1		1		4	135	
UNID Large mammal	2	5		18	6	48	1	9	5	7	1		3	1	13	119	
UNID Medium mammal	54	129	2	97	26	90	6	15	15	24	27	6	9	2	51	553	
UNID Medium to large Mammal	1	11		6	3			5	4						11	41	
UNID Small mammal				3	1											4	
Total	59	159	2	127	67	192	8	31	45	32	29	6	13	3	79	852	
Molluscs																	
Mollusc								2	2							4	
Melanopsis costata		1						2			1				2	6	
Melanopsis praemorsa				1	1	4	1	2	4	4			2		3	22	
Unio species								4								4	
Unio tigridis								29	3	5				1	2	40	
Xeropicta vestalis															2	2	
Total	0	1	0	1	1	4	1	39	9	9	1	0	2	1	9	78	
Grand Total	80	259	6	300	118	265	23	99	61	65	81	7	18	9	176	1567	

Table 2. Species NISP (number of fragments identified to species).

<i>Common name</i>	1	2	2/3	3	4	5	5/6	5-7	7	HALAF	MIXED	MIXED HALAF	ROMAN	TOP- SOIL	UNSTRAT	<i>Total</i>
Sheep	4	4	16	49	46	25	6	4	1	34	20				22	231
Goat		14	10	50	12	8	2			10	3		4		14	127
Sheep/Goat	38	147	26	336	68	94	19	21	24	35	38		16	36	175	1073
Medium Ungulate	12	68		144	20	4		18		12	10		2		28	318
Pig	1	110		296	84		28			24	46			2	34	625
Cattle	20	54		140	28	32	42	122			6	90			106	640
Gazelle		22				16					16				14	68
Fallow deer					28											28
Gazelle/Roe Deer?					4											4
Roe deer?																0
Equid					18	6		180		14				6	34	258
Hare				1												1
Dog/Wolf								2								2
Small rodent		3													1	4
Tortoise		422							1							423
Total	75	844	52	1016	308	185	97	347	26	129	139	90	22	44	428	3802
Unidentified																
UUU	21	26		21	47	165	26	4	51	2	2		1		14	380
UNID Large mammal	24	72		122	20	298	8	138	21	44	1		12	14	81	855
UNID Medium mammal	78	128	16	205	53	137	4	44	20	21	37	2	28	6	108	887
UNID Medium to large Mammal	6	13		20	32			134	12						49	266
UNID Small mammal				1	1											2
Total	129	239	16	369	153	600	38	320	104	67	40	2	41	20	252	2390
Molluscs																
Mollusc								1								1
<i>Melanopsis costata</i>		1						1			1				2	5
<i>Melanopsis praemorsa</i>				1	1	1	1	2	2	3			19		2	32
<i>Unio species</i>								2								2
<i>Unio tigridis</i>								12	1	9				1	2	25
<i>Xeropicta vestalis</i>															1	1
Total	0	1	0	1	1	1	1	18	3	12	1	0	19	1	7	66
Grand Total	204	1084	68	1386	462	786	136	685	133	208	180	92	82	65	687	6258

Table 3: Bone Weights.



Element	Measurement	Damishilyya	Çayönü Hongo and Meadow (1998)	LSI
Scapula	SLC	19.8	26.6	-0.13
Humerus	Bd	40	45.9	-0.06
Ulna	BPC	19.9	25.3	-0.10
Calcaneum	GB	31.6	26.8	0.07
	CD	30.9	34.1	-0.04
Mayer et al. (1998)				
m3	L	31.2	38.3	-0.09

Table 4. Suid LSI

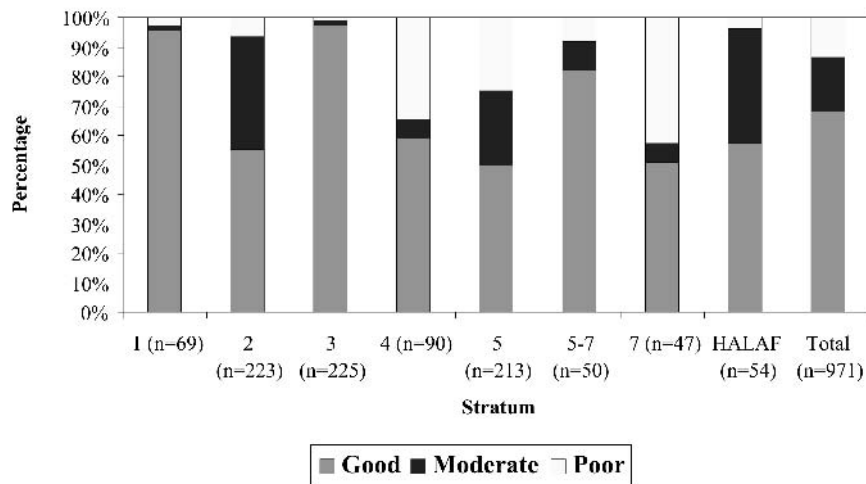


Fig. 1: Surface preservation by phase

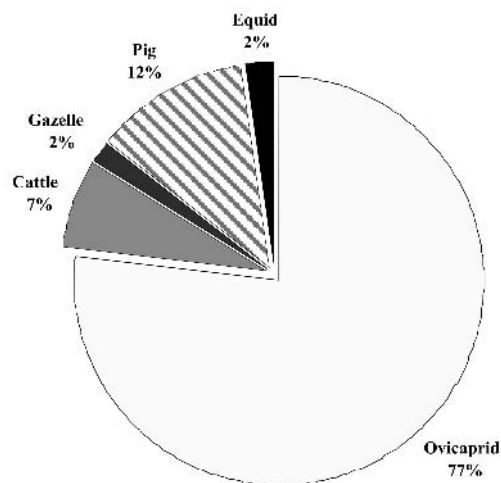


Fig. 2. Species proportions, percentage of top five species.

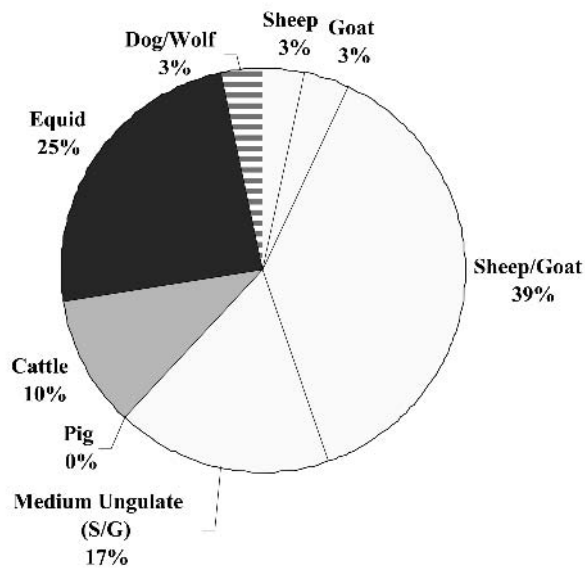


Fig. 3. Species proportions from NISP in Large Neolithic Ash Pit (Stratum 5 – 7).

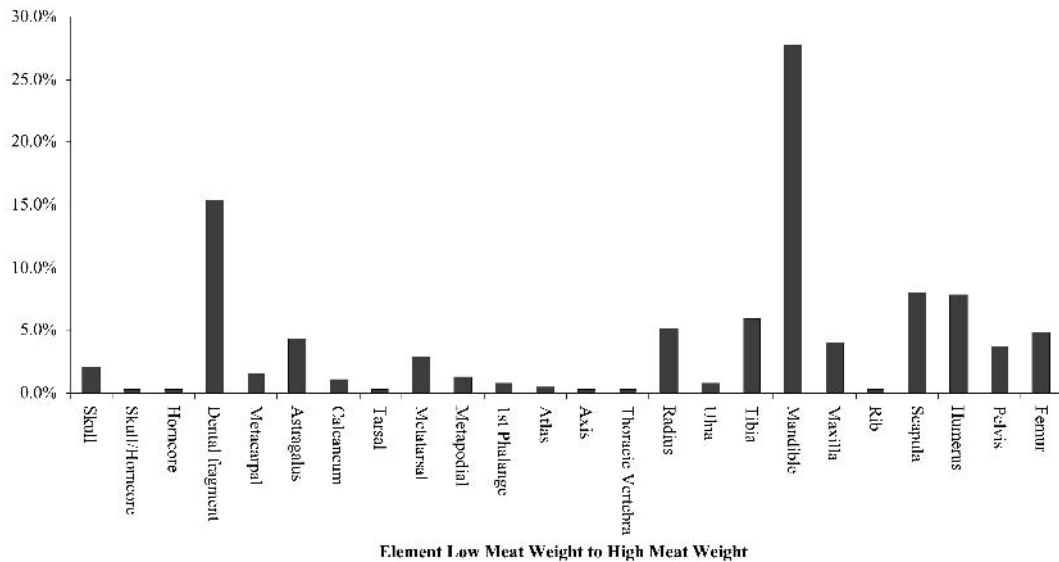


Fig. 4. Ovicaprid skeletal element distribution by meat utility, based on NISP (see table 2)

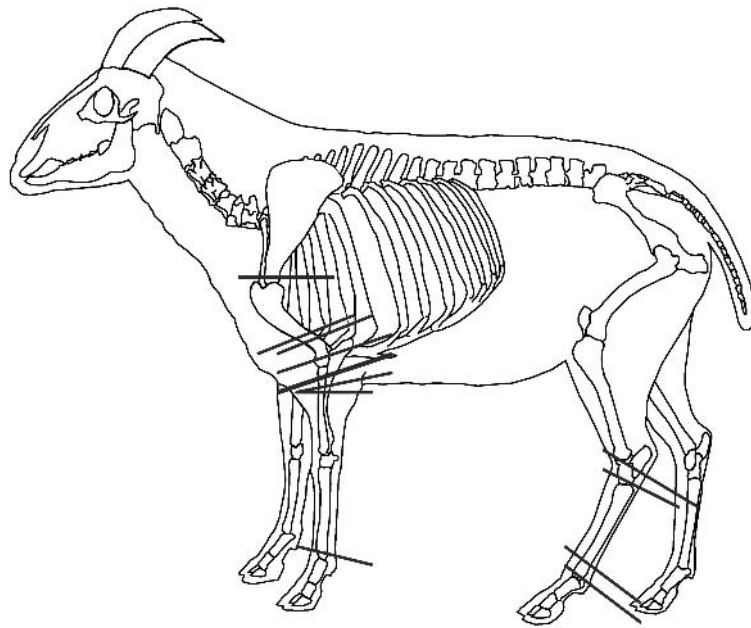


Fig. 5. Position of butchery marks on ovicaprid skeleton

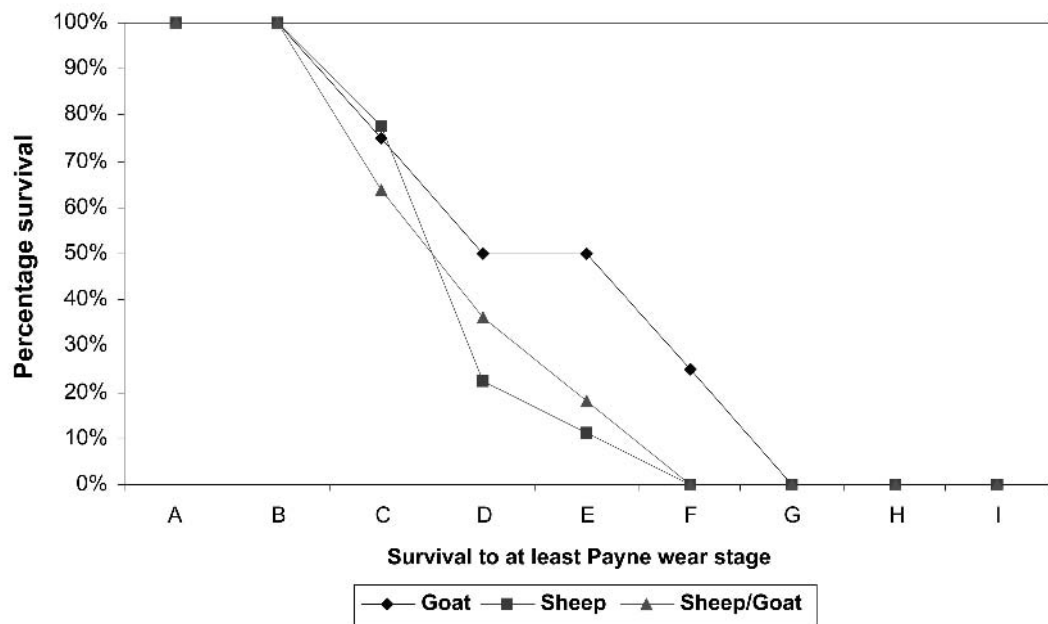


Fig. 6. Sheep versus goat mortality curve from toothwear (based on Payne)

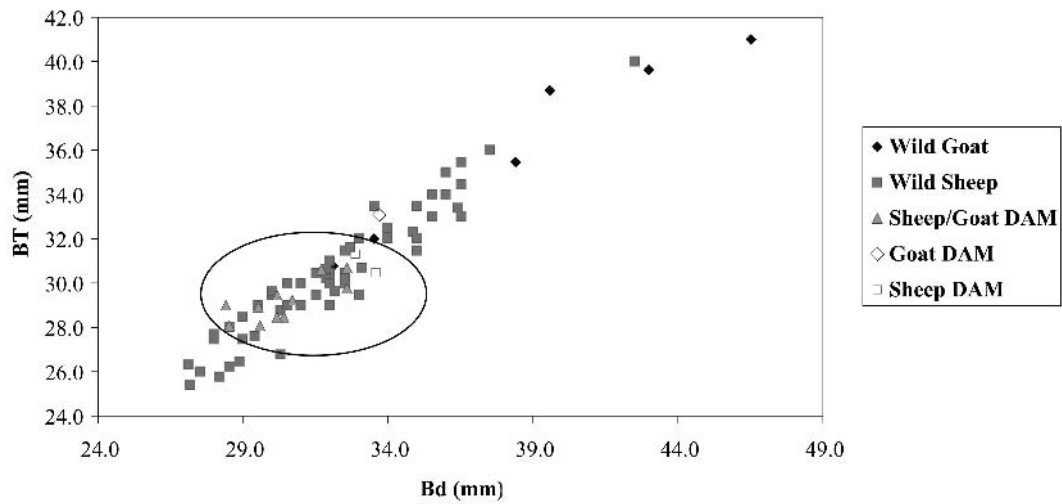


Fig. 7. Comparison of Damishliyya ovicaprids to modern wild specimens. Scatterplot of ovicaprid humeri. Correlation between Bd and BT.

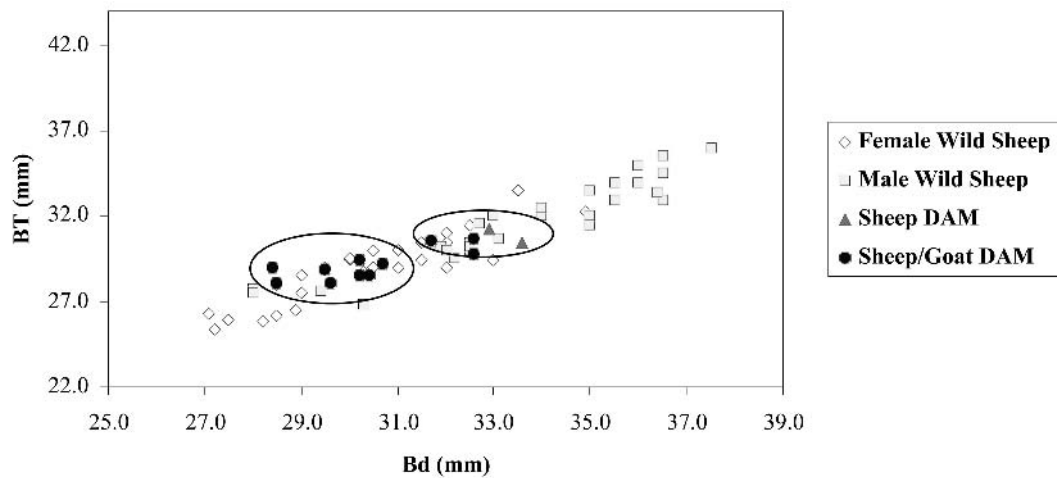


Fig. 8. Comparison of Damishliyya ovicaprids to modern wild specimens of known sex. Scatterplot of ovicaprid humeri. Correlation between Bd and BT.

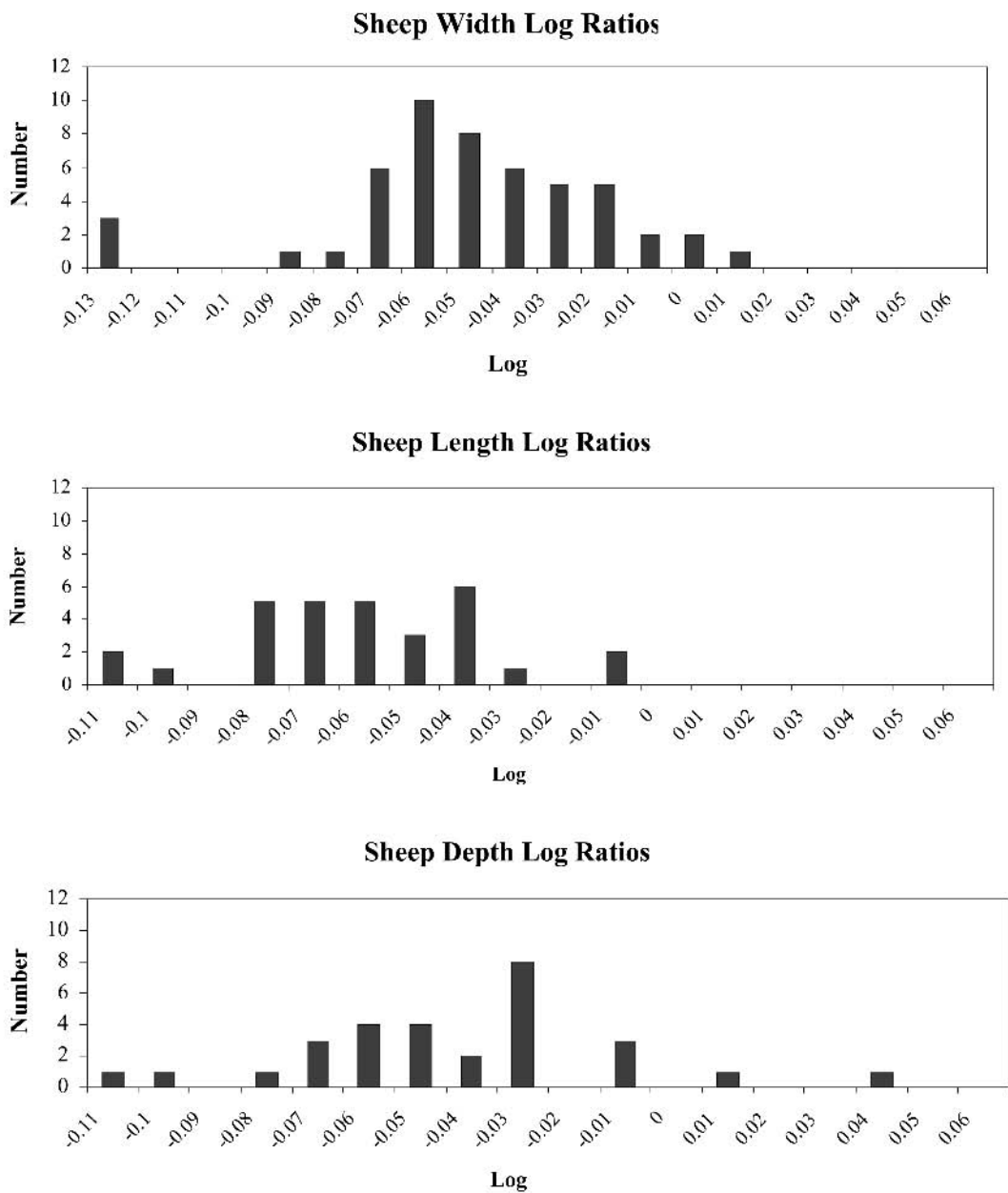


Fig. 9. Sheep LSI analysis

The measurements used in the log diagrams are as follows:

Width: Astragalus Bd and Bp, Humerus BT and Bd, Radius Bd and Bp, Metacarpal Bd-epi and Bd-con, Metatarsal Bd-epi and Bd-con, Tibia Bd, Scapula SLC, 1st Phalanx Bd and Bp.

Length: Astragalus GLI and GLm, Humerus SHT and GHT

Depth: Astragalus Dm and Dl, Humerus Dd, Radius Dp, Metacarpal Dp, Metatarsal Dp, Tibia Dd, 1st Phalanx Dp, 1st Phalanx Dd.

For description of measurements see von den Driesch, 1976

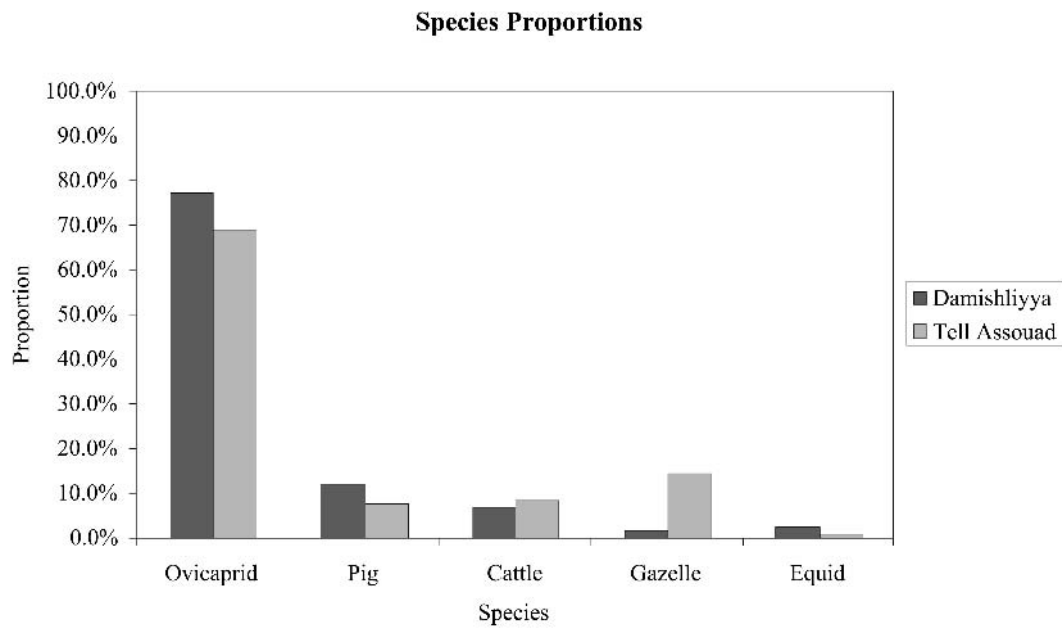


Fig. 10. Comparison of species proportions at Tell Damishliyya and Tell Assouad